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Item 12 of the provisional agenda

COMPUTERIZATION PROGRAMME OF UNIDO

Report to the Programme and Budget Committee on the results of a specific, in-depth external audit examination of the electronic data processing system acquisition project of the United Nations Industrial Development Organization*

Report by the External Auditor

Summary

In compliance with Board decision IDB.7/Dec.26, paragraph (d), presents a report on the in-depth examination by the External Auditor of all aspects of the acquisition of the electronic data-processing system of the Organization.

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* The present document has not been edited.

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Annexes

The following annexes set out the full scope of the audit exercise as well as the particulars of the review for the subject matter of Sections 2 and 3:

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LETTER OF TRANSMITTAL

31 January 1991

Sir,

As requested by the Industrial Development Board in decision IDB.7/Dec.26, paragraph (d), of 9 November 1990, I have the honour to present to the Programme and Budget Committee my report on the results of a specific, in-depth audit examination of the acquisition of a new electronic data processing system by the United Nations Industrial Development Organization.

Accept, Sir, the assurances of my highest consideration.

(Signed)

Jeroom L.E. VAN de VELDE
Senior President of the
Court of Audit
Belgium

External Auditor

Enclosures

The Chairman of the
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Belgium External Audit

Report to the Programme and Budget Committee on the results of a specific, in-depth external audit examination of the electronic data processing system acquisition project of the United Nations Industrial Development Organization.

GENERAL

1. In paragraph (d) of decision IDB.7/Dec.26 of 9 November 1990, relating to the computerization programme of the United Nations Industrial Development Organization (UNIDO), the Industrial Development Board (IDB) has requested the External Auditor to examine in depth all aspects of the acquisition of the electronic data processing (EDP) system, and to report, in terms of conformity with or departure from financial propriety, procedural responsibility and fiscal management to the Programme and Budget Committee (PBC) at its seventh session.

2. Decision IDB.7/Dec.26 of 9 November 1990, is in conformity with UNIDO Financial Regulation 11.6 which stipulates that "the Conference, the Board or the Programme and Budget Committee may request the External Auditor to perform certain specific examinations and to issue separate reports on the results."

3. The in-depth examination of the computerization programme of UNIDO has been carried out by a team of four auditors of the Court of Audit, Belgium, at UNIDO Headquarters in Vienna, during the months of December 1990 and January 1991, and was made in accordance with the common auditing standards adopted by the Panel of External Auditors of the United Nations, the Specialized Agencies and the International Atomic Energy Agency (IAEA).

4. The audit exercise included:

(i) the compilation and examination of an analytical chronology of decisions, facts and events relating to the UNIDO computerization programme;

(ii) an update and analysis of all financial and accounting data relating to the programme;

(iii) a review of budgetary documents, records and reports for the period 1987-1990;

(iv) an examination of previous external audit findings, observations and recommendations on various relevant procedural and internal control issues (procurement, budgetary control, cash management, accounting and financial reporting, ...);

(v) an analysis of relevant provisions in the UNIDO Constitution and in the Financial Regulations and Rules of the Organization as well as of the available documentation on organizational, procedural and internal control directives, instructions and guidelines issued by the Secretariat and by Management;

(vi) an examination of relevant documents, decisions and resolutions of the Policy-Making Organs (PMO) of the Organization;

(vii) an audit examination of all procurement and contract files concerned together with the related files of the substantive divisions and sections (EDP, General Services, Finance, ...) and the files and minutes of various advisory and management committees;

(viii) a study of special internal UNIDO reports on the computerization programme, in particular:

- the Report on the Review of Issues Related to the Cost Overrun of the EDP Programme (dated 9 May 1990); and,

- the Internal Audit Report on Suggested Irregularities.

5. Additional information and clarification on specific issues has been obtained by the audit team, in the course of the examination exercise, from

interviews with a number of staff members of the Organization, especially from the Office of the Director-General and from various divisions and sections in the Department of Administration.

6. In line with established auditing practices the factual evidence as well as the general outline of the main findings and observations contained in the draft report have been discussed by the audit team with Senior Management Officials of the Organization.

7. The findings and observations resulting from our examination of the EDP-system acquisition project are reported below in a succinct manner and in line with the reporting terms of decision IDB.7/Dec.26 of 9 November 1990. The full scope of our audit exercise as well as the particulars of our review for the subject matters procedural responsibility and fiscal management are set out in more detail in separate annexes to the report.

SECTION I. FINANCIAL PROPRIETY

A. Preparation and design of the UNIDO computer project

8. The design and elaboration of any large automation project require expert and in-depth preparation. First of all, the information needs must be identified: who needs what information at what time; how can this information be provided; and what must be done with this information afterwards. In order to answer all these questions, the whole organization has to be analyzed, first globally and then each division separately, with a view to charting in detail all administrative organization particulars as well as the exact division of tasks.

9. On the basis of the results of such a preliminary study the areas suitable for automation can be determined/selected along a standard subdivision in three main groups:

a. the administrative tasks for which automation is a compelling priority if the organization is to continue functioning further in a sound and efficient manner;

b. the tasks for which automation is desirable but where there are no marked time constraints, i.e., the continued existence of the organization is not jeopardized in case the automation is not proceeded with immediately;

c. the administrative and other tasks where the use of the computer does not yield enough improvement to justify the necessary investment (no accelerated or improved execution can be realized).

10. Our examination disclosed that the complete data generated by a preliminary study as outlined above, i.e., establishing UNIDO's information and computerization needs, accompanied by an analysis of the priorities, were not available at the Secretariat at the time of the commencement of the EDP-system acquisition programme.

11. In our opinion this lack of complete information on UNIDO as an organization and on its procedures and the division of tasks deprived the Organization of a sound basis on which, for instance, the terms of reference for a consulting firm could have been established.

12. In this respect, we noted that since the start of UNIDO as a Specialized Agency in 1986 several ideas about computerization have been advanced in the Secretariat. These (informal) proposals, however, were never properly documented by appropriate financial programme estimates. It is obvious that budgetary and financial implications should have been a major concern for the Secretariat at the time, given the serious financial crisis during the 1986-1987 biennium.

13. Nonetheless, we understand there were a number of reasons (shown in various UNIDO documents) why the Organization wished to have its own EDP-system:

a. When using the IAEA-facilities, the Secretariat was placed in a subordinate and dependent position:

- no free choice on the acquisition of software products, and
- given the available capacity there was a factual limitation on the possibilities for developing new applications.

b. For practical reasons and due to growing needs and demands several UNIDO divisions had started developing applications on Personal Computers (PC) sometimes even owned by the staff concerned. All of this occurred without EDP-Service being able to assume a co-ordinating and attending role. As a result, the information produced was not transferable from one application to another.

c. Developing countries increasingly expected from UNIDO a better and faster response to their requests for assistance in the area of computerization.

d. The ever growing amount of information on internal matters, on ongoing and pipeline projects, could no longer be mastered manually. The storage/savings/retention of this information had to be organized centrally in view also of the importance of the data.

14. In view of this situation at UNIDO when the "Gesellschaft für Management- und EDV-Organisationsberatung" (G.M.O.) made the consultant study on EDP, three possible ways to provide central computer power were put forward by these consultants:

- UNIDO has its own computer and operates it;
- UNIDO has its own computer, but another party (most likely IAEA) runs it;
- the required computer service is provided by a commercial computer center.

15. The consultant firm mentioned also that the Office Automation (OA) equipment could, as it was at the time of the study, be run separately.

16. After explaining the advantages of using distributed computer power G.M.O. stated the main disadvantage of separate architectures as follows: "Separate architectures are advisable only if each architecture provides features that cannot be provided by the other architecture". At that time OA at UNIDO was provided through WANG equipment, but G.M.O. was probably not aware of UNIDO's intention

to acquire an IBM-9370 mainframe in order to support its OA functions. Therefore, the G.M.O. calculations took into account separate machines.

17. Furthermore, G.M.O. did not provide detailed figures that would have made it possible to compare the above mentioned possibilities on an appropriate financial basis. In fact, detailed financial figures were given only for the acquisition of an IBM mainframe (with the suitable software).

18. We noticed also in the G.M.O. report that the concept of centralization of all computer power already at that time was no longer realistic because the general trend towards PCs and the possibility of storing individual data and individual processing is getting ever stronger. (Chapter 3. A strategy for improving the Information Situation at UNIDO; 3.1 Scenarios; 3.1.1 Centralized vs. Decentralized Computer Services refers). G.M.O. further explained that Office Automation is a clear case for decentralization (3.1.1.2 Office Automation refers).

19. Similar ideas were also expressed in the UNIDO "Report of the Computer Management Committee (C.M.C.) Working Group on Computer Facilities. - October 9, 1987" (Chapter 7., 7.1, Overview, refers): "In general there are arguments against meeting all the requirements with one large system, one single computer to which all workstations are directly attached. Large systems tend to develop bottlenecks. This may be in the Central Processing Unit (CPU), which then has to be upgraded. This encourages more usage, which results in a degradation of input and output performance"; and further (paragraph 7.4 Hardware refers): "New categories such as superminis and supermicros are emerging. Developments in networking and telecommunications mean that some computing problems can best be solved by a series of linked, smaller computers rather than by a large one. These computers can be adopted to particular tasks, being specially suitable for database handling or for scientific calculations or whatever. This does not mean that the day of the large general purpose computer is over, but it does mean that it is not always the best solution to a particular problem."

20. Both these reports thus highlighted the possibility of joining recent developments in computer philosophy, namely decentralization of the processing and central management of data.

21. In UNIDO's case this last concept would have allowed new equipment to be added when necessary and would also have opened the possibility of having kept the IBM-9370 computer to support all OA activities thus allowing the Organization to acquire a smaller mainframe:

(i) to run the applications to be retrieved from the IAEA computer; and (ii) with the capacity corresponding with the information needs of UNIDO.

22. In our view, the realization of this last concept would probably have yielded advantages for the Secretariat, as for instance:

- a smaller mainframe could have made it possible for UNIDO to ensure the facilities management with its own staff resources;

- the installation of the 9370 machine in March 1989 (scheduled to be removed in November 1990 as part of the new mainframe contract) would have been fully cost-effective.

23. While we agree that several ideas on the subject of alternative computerization solutions as mentioned above have been discussed at the time and were even touched upon in some UNIDO reports, our current review indicated, nevertheless, that a complete analysis of both the financial and the organizational aspects of such alternative solutions has never been made by the Organization. The failure to carry out this analysis, in combination with a thoroughly documented information plan, at an early enough stage of the EDP-system design for UNIDO must be qualified as a major shortcoming.

24. In this respect, we got the impression that all efforts of EDP-management were concentrated, from the beginning, on the acquisition of a powerful mainframe, by making the Secretariat choose only between two possibilities: a) carrying on with the mainframe concept, or b) remaining in a position where it would become more and more difficult to carry out the multiple tasks and assignments of the Organization.

25. The original plan of UNIDO Management to acquire approximately eleven hundred workstations (= personal computers that can run word-processing or data-processing software, and to which data can be down-loaded from the mainframe for specific analyses) - later on reduced considerably - is also to be placed in the above context. An in-depth preliminary study would, indeed, have located the areas where only data input and/or retrieval are required and where, therefore, the installation of workstations for jobs which can be performed adequately with inexpensive terminals, is questionable from the financial viewpoint.

26. In conclusion, the Secretariat, in order to allow making fully appropriate decisions on the future EDP-system of the Organization, should have been provided in due time with an in-depth analysis of the overall information needs, including several alternative proposals on how to accommodate its institutional computer requirements (worked out both technically and financially).

27. Moreover, since the Secretariat had no global view on its computerization programme - the infrastructure was indeed built up in a piecemeal manner - it was of course practically impossible to have an overall idea on the financial implications. Each change in the technical concept of the project had financial consequences implying substantial costs revisions. At the time of our current audit, however, it is very difficult to clearly indicate the responsibilities for the financial control in this area. The fact that the Management Information Advisory Committee (MIAC) did not function was probably a major factor, but lack of or failure in the exchange of information between different services can also not be denied. Though EDP-Service had no direct responsibilities in this matter, one can wonder nevertheless why the Chief of this service did not take an initiative.

28. In this regard we wish to refer to the Director-General's Bulletin B.84 dated 19 July 1988. In section "Acquisition of Computer Resources", paragraph 5, is stated: "All requests for computer resources at UNIDO Headquarters - including requests for resources which are acquired through project funds and which must remain at Headquarters - must be addressed in writing to the Chairman of Management Information Technical Committee (MITC). The Chairman will arrange for such requests to be thoroughly reviewed by MITC and, where appropriate,

submitted to MIAC, along with MITC's recommendations. Requests subsequently approved by MIAC are then passed to the Electronic Data Processing and Office Automation Service (DA/EDP), which will make all necessary arrangements, including financing, requisition, installation and programming, within the resources available. This policy applies to all requests, irrespective of source of funding." (emphasis added). Although these guidelines were (more or less) adhered to for the acquisition of smaller items, our examination did not show substantive evidence that these instructions were also observed for the mainframe project.

29. As Chairman of MITC and member of MIAC (which was among others responsible for EDP budgetary matters) the Chief of EDP/OA was, at that time, probably the best informed UNIDO staff member on the increasing financial impact of the mainframe acquisition project.

B. Examination of component cost elements, possible savings and reductions

30. At the time of our audit, the costs contractually incurred by the Secretariat, as calculated by us, amounted to AS 226,920,837 or US$17,590,763 (at the rate of exchange US$1 = AS 12,90). The detailed information is given in Table 1.

31. The above mentioned total costs of the project are, to the extent they could be judged by us, fairly complete and correct and also include for instance the maintenance and license fees of the software. There are, however, other inevitable cost elements which will influence the total cost of the project in future (e.g. increased electricity bills; increase/decrease in paper consumption etc.) although their exact financial impact cannot be defined firmly yet. Moreover, it is obvious that other unforeseen/ unforeseeable costs still may arise at some future stage of the implementation of the project.

32. It is common knowledge that the savings mentioned or presented in various UNIDO reports can be realized only in theory and in ideal circumstances and are therefore valid only if systems managers, applications development staff, user training staff, etc. reach an optimum level of efficiency and effectiveness.

33. Moreover, the first savings generated by the project will be realized only when most applications will be fully operational and staff will have learned to use the available EDP resources in an economical and efficient manner. Nevertheless, a major redistribution of tasks and duties should, in our view, at any rate be envisaged by the Secretariat at an early stage with a view to maximizing the positive impact of the computerization exercise.

34. Audit conclusion: The savings presented by the Secretariat in various documents must, at this (early implementation) stage, be seen as tentative and theoretical the more that in public institutions time savings cannot easily be measured in financial terms. The adduced or suggested savings of the project - of whatever nature and elegance of presentation - are not to be expected during the next two or three year period.

35. Comparative tables of possible reductions based on known contract prices.

36. In Table 2 the totals per biennium are given supposing that UNIDO would have bought the mainframe computer by paying the bottom-line price of AS 69,824,000.

37. In the supposition that UNIDO would enter into the "Leasing-cum-installment" option as proposed by IBM (cfr document IDB.7/31 dated 5 October 1990 para. 19-a; cfr also Annex 2 para 10.6(f). Amendment to the agreement/contract with IBM) the resulting financial obligations are shown in Table 3 (only totals per biennium in AS are given).

38. If UNIDO should make use of the possibility to terminate the Facilities Management Contract (*) by 31/12/1991 or by 31/12/1993 the financial impacts (based on the figures of the original agreement with IBM) as a result of such decision are shown in Table 4 and Table 5 respectively.

39. The combination of adopting the new IBM-proposal (leasing-cum-installment) with the possibility to terminate the Facilities Management Contract will give the results shown in Tables 6 and 7.

40. What also has to be taken into consideration is that the contracts/agreements entered into are legally binding; each termination of these contract/agreements will, except for the Facilities Management for which special termination in 1991 or 1993 was laid down in the Agreement, result in substantial extra costs.

C. Comparison of EDP-budgets and expenditures with other budgetary and expenditures categories

41. Since no specific coding structure for EDP allotments accounts codes existed prior to November 1990, the increase in EDP costs during 1989 and 1990 can be compared only with the total costs for 1988 (cfr table 8).

42. A comparison with the amounts originally appropriated in the proposed budgets (tables 9, 10, 11) gives a good indication of how the computerization costs will affect the future budgets of the Organization.

43. In the proposed regular budget 1988-1989 (totalling at US$136.950 million - GC.2/10 - page 21) an amount of US$2.643 million excluding staff costs i.e. some two per cent was provided for computer and office automation related costs. Actual disbursements for EDP and OA amounted to US$11.570 million against a total of US$173.342 million Regular Budget (RB) expenditures (cfr statement I - accounts for the biennium 1988-1989 - IDB.7/11) or 6.7 per cent.

44. A similar exercise for the first year of the biennium 1990-1991 with regular budget provisions in the amount of US$180.481 million (GC.3/10/Rev.1 page 29) shows that an amount of US$3.489 million was provided for EDP utilities, i.e. some two per cent. Expenditures in 1990 however already totalled up to US$4.956 million or 5.3 per cent of the amount of US $93.254 million RB expenditures for the first year of the biennium (calculation based on the second cut-off of the accounts for 1990).

45. From the foregoing, it can be stated that actual expenditures for the computerization project are more than double of the relevant appropriations.

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* It should be clear that termination of the Facilities Management Contract means that UNIDO will have to appoint own staff to take over the management. That decision has to be taken in due time thus giving staff the opportunity to get fully trained for that task. If the appointment of staff is not done by redeployment, additional staff costs will become inevitable.

Table 1

Firm commitments entered into before 1 January 1990 expressed in Austrian Schillings

Vendor/Supplier	Contract	1990/1991	1992/1993	1994/1995	Totals
IBM (mainframe)	90/319	8,407,627	35,713,848	8,928,462	53,049,937
IBM (software)	90/319	2,773,324	18,012,744	18,012,744	38,798,812
IBM (system service) (1)	90/380	3,062,634	4,836,954	3,627,715	11,527,303
IBM (facilities man.)	90/335	28,108,800	30,780,000	15,390,000	74,278,800
IBM (Token Ring software)	90/300	597,504	723,648	723,648	2,044,800
IBM (Token Ring hardware)	90/300	327,043	654,086	654,086	1,635,215
Olivetti (2)	90/291	1,565,904	1,337,543	-	2,903,447
Olivetti (3)	90/318	2,587,200	2,263,800	-	4,851,000
Olivetti (4)	90/255	796,304	796,304	398,152	1,990,760
Wang	90/236	1,825,344	1,825,344	-	3,650,688
Data Service (5)	90/294	281,568	175,980	-	457,548
Data Service (6)	90/293	31,008	21,964	-	52,972
Data Service (7)	90/292	76,968	70,554	-	147,522
Rank Xerox (8)	90/254	249,744	31,218	-	280,962
Rank Xerox	90/225	349,920	349,920	349,920	1,049,760
Rank Xerox	90/382	1,035,720	1 380,960	1 380,960	3,797,640
Rank Xerox	90/320	272,080	75,960	75,960	424,000
Alcatel (9)	90/290	403,200	53,150	-	456,350
MBA (10)	90/321	425,112	425,112	-	850,224
EDV Software	90/253	3,811,280	692,960	692,960	5,197,200
TSG-Software (11)	90/256	4,890,620	4 890,620	2 445,310	12,226,550
Comparex	89/476	278,422	556,844	556,844	1,392,110
Nixdorf	90/285	255,010	-	-	255,010
IBM (9370)	90/333	661,480	-	-	661,480
IBM (9370)	90/322	1,964,593	-	-	1,964,593
		65,038,409	105,669,513	53,236,761	223,944,683
IBM (12)	90/319	-	-	2,976,154	2,976,154
				56,212,915	226,920,837
		28.66%	46.56%	24.78%	100%

(1) Contract for 51 months starting 1.4.1990, ending 30.6.1994. Payments: 1.4.1990 to 31.12.1990: AS 644,157, year 1991: AS 2,418,477. For the following years prices will depend on the equipment for which service has to be provided and on IBM-announcements concerning the charges. To make calculations we used AS 2,418,477/year.

(2) Contract ends on 31.8.1993 for the first part and on 30.9.1993 for the second part.

(3) Contract ends on 30.9.1993.

(4) Five-year contract starting 1.1.1990.

(5) Contract ends on 31.3.1993.

(6) Contract ends on 31.5.1993.

(7) Contract ends on 31.10.1993.

(8) Contract ends on 31.3.1992.

(9) Contract ends on 31.3.1992 for the first part and on 31.5.1992 for the second part.

(10) Contract ends on 31.3.1993.

(11) Five-year contract starting 1.1.1990.

(12) If UNIDO stays with the original mainframe contract as it was signed on 7 December 1989, an amount of AS 2,976,154 (US$230,710, ROE US$1 = AS 21.90) has to be paid as a buy-out sum by the end of the lease term, i.e. 30.6.1994.

Table 2

1988/89	1990/91	1992/93	1994/95	Total
69,824,000	56,630,782	69,955,665	44,308,299	240,718,736

Table 3

Rescheduled commitments due to the acceptance by UNIDO of the "leasing-cum-installment" proposal

1990/91	1992/93	1994/95	1996/97	Total
56,630,782	69,955,665	44,308,299	-	170,894,746
8,407,627	22,800,000	21,432,000	10,716,000*	63,355,627
-	-	2,445,310	-	2,445,310
65,038,409	92,755,665	68,185,609	10,716,000	236,695,683

**

Table 4

Termination of the Facilities Management Contract by 31/12/1991

1990/91	1992/93	1994/95	1996/97	Total
36,929,609	74,889,513	40,822,915	-	152,642,037
28,108,800	-	-	-	28,108,800
65,038,409	74,889,513	40,822,915	-	180,750,837

**

Table 5

Termination of the Facilities Management Contract by 31/12/93

1990/91	1992/93	1994/95	1996/97	Total
36,929,609	74,889,513	40,822,915	-	152,642,037
28,108,800	30,780,000	-	-	58,888,800
65,038,409	105,669,513	40,822,915	-	211,530,837

**

Table 6

Termination of the Facilities Management Contract
by 31/12/1991

1990/91	1992/93	1994/95	1996/97	Total
36,929,609	61,975,665	52,795,609	10,716,000*	162,416,883
28,108,800	-	-	-	28,108,800
65,038,409	61,975,665	52,795,609	10,716,000	190,525,683

**

Table 7

Termination of the Facilities Management Contract
by 31/12/1993

1990/91	1992/93	1994/95	1996/97	Total
36,929,609	61,975,665	52,795,609	10,716,000*	162,416,883
28,108,800	30,780,000	-	-	58,888,800
65,038,409	92,755,665	52,795,609	10,716,000	221,305,683

**

* In the Tables 3, 6 and 7 only the installment payments concerning the IBM mainframe are given for the 1996-1997 biennium. It is obvious that the operational costs will continue after the 1994-1995 biennium.

** The total does not include the amount of AS 24,351,700 already paid in 1989.

Table 8

Expenditures for Office Automation and Computerization (in US$)

	For 1988 disbursements		For 1989 disbursements until 31.12.1990	For 1990	
	In 1988	In 1989		Actual costs	Outstanding obligations until 31.12.90
- 372 Software			308,303.69	-	-
- 412 Minor alterations to premises			2,207,296.88	29,868.51	8,411.00
- 413 Cables			15,521.95	14,585.13	-
- 415 Contracts other than EDP equipment-related			37,782.16	87 576.08	-
- 434 Contracts			2,553,300.80	388 125.48	39 625.00
- 437 Rental/lease of EDP hardware/software			-	721 527.27	57 566.00
- 438 EDP facilities management				1 162 804.97	-
- 443 Industrial Inquiry Systems, ICC			6,433.12	21 603.14	12 346.00
- 512 Stationery			2,000.00	-	-
- 527 Software			768,514.42	1 024,786.33	59,963.96
- 532 Manuals			10,798.31	682.77	15,191.00
- 592 Data-processing supplies			146,397.54	186,075.43	89,257.00
- 599 Miscellaneous supplies, computer-related			10,386.24	23,598.94	1,525.00
- 611 Furniture computer-related			138,569.59	33,396.02	-
- 620 Hardware			2,436,264.11	35,172.19	16,145.00
- 935 Joint Computer Services (IAEA)			1,073,748.52	795,941.97	130,865.00
Total I	1,334,895.79	320,592.65		4,525,744.23	430,894.96
Total II	1,655,488.44		9,715,317.33		
TOTAL	11,570,825.77			4,956,639.19	

Table 9

Regular budget estimates for EDP
for the biennium 1988-1989
(based on doc. GC.2/10 - pages 210 - 211)

	US$	US$
- Computer Services provided by IAEA		1,605,800
- Data base acquisition and rental for budget automation	166,700	
- Maintenance and repair of computer and office automation equipment	520,000	
- Replacement of existing computer and office automation equipment	228,000	
- Purchase of additional word processors	72,900	
		+ 5 % inflation
	987,600	49,380
Total		2,642,780

Table 10

Regular budget estimates for EDP
for the biennium 1990-1991
based on doc. GC.3/10/Rev.1 pages 135-136)

	US$
- Computer Services provided by IAEA	450,300
- Data base acquisition and rental	741,000
- Rental and maintenance of data processing equipment	1,838,000
- Maintenance or replacement of office automation equipment	460,300
Total	3,489,600

Table 11

Comparison of EDP budgets and expenditures with other budgetary and expenditure categories (in US$ Mio)

	Budget proposals		Expenditures	
1.	Total Regular Budget 1988-1989 (GC.2/10 - page 21)	136.95	173,342	Statements I - IDB.7/11
2.	Total for administration and common services (GC.2/10 - page 206)	49.86	68,761	idem
3.	Total computer and O.A. (staff costs not included) (GC.2/10 - pages 210-211)	2,643.00	11,570	Actual disbursements (see table 9)
	Percentages 1 - 3	2%	6.7%	
	2 - 3	5%	16.6%	
			For the 1st year of the biennium 1990-1992 based on the 2nd cut-off dated 23.01.1991	
1.	Total for Regular Budget 1990-1991 (GC.3/11/Rev.1 - page 29)	180,482.00	93,254	
2.	Total for administration and common services (page 129)	61,657.00	34,820	
3.	Computer and O.A. (staff costs not included) (Pages 135-136)	3,489.00	4,956	(see table 10)
	Percentages 1 - 3	2%	5.3%	
	2 - 3	5.5%	14.2%	

46. When the same exercise is made for the appropriations and expenditures of the "Department of Administration and Common Services" only, the EDP and OA share which for the biennium 1988-1989 as well as for 1990 was budgeted at about five percent of total resources actually went up to 16.8 and 14.2 per cent of the 1988-1989 and 1990 expenditures respectively.

47. These data clearly demonstrate that the computerization programme will absorb a large portion of the regular budget funds in the future.

48. On the other hand it is clear that UNIDO was working with obsolete equipment which, as a matter of fact, impeded the development and use of computer applications. In this regard modernizing the whole EDP-configuration was necessary (inevitable). Anyhow, whatever decision UNIDO would have taken, the financial impact would have been considerable. The costs related to the solution UNIDO endorsed, and detailed in Table 1(b) of the IDB.7/31 document of 5 October 1990, could perhaps have been presented in some other way. For instance, a division can be made as follows:

(a) costs directly related to the acquisition of the mainframe hardware (investment costs);

(b) costs related to the software and the development of applications (operating costs);

(c) costs necessary to run the whole system (staff, paper, maintenance, ...)

By dividing the costs mentioned under 2) and 3) in already existing costs and new additional costs a clear distinction between the financial impact as an immediate result of the new EDP-project and the costs as budgeted for in the Programme and Budgets proposals in the Medium-term Plan 1990-1994 will be shown.

SECTION 2. PROCEDURAL RESPONSIBILITY - CONTRACTS AND PURCHASES

A. Formal Competitive Bidding/Calling for Competitive proposals

49. Pursuant to UNIDO Financial Rule 109.18, except as provided in rule 109.19, contracts for the purchase or rental of services, supplies, equipment and other requirements shall be awarded after the conducting of formal competitive bidding or the calling for competitive proposals. Tenders of bids shall be invited by advertising by the publication or distribution of formal invitations to bid. Where

the nature of the work involved makes it appropriate, competitive proposals shall be called for, and a comparative analysis of such proposals shall be kept on record.

50. Pursuant to Financial Rule 109.21:

(a) When the bids have been opened and when proposals have been received, their technical acceptability and cost shall be assessed and compared. A comparative written assessment shall serve as the basis for awarding the contract and shall be examined by the Contracts Committee before the Committee renders its advice as required under rule 109.17.

(b) Contracts shall be awarded to those firms or institutions that have tendered the lowest, technically acceptable bid or submitted the lowest, technically acceptable proposal, provided that where the interests of the Organization so require, all bids or proposals may be rejected by the Deputy Director-General for Administration (DDG/ADM) or such other official authorized under rule 109.16, who shall record in writing the reasons for the rejection of the bids or proposals and determine whether new competitive bids or proposals should be invited, or a negotiated contract should be entered into.

51. We noted in this regard that maybe already end 1987 and certainly in 1988 Management on the basis of technical analysis had reached the conclusion that to preserve the investment of existing computer applications, data processing should be IBM compatible or, in other words, that the prevailing industry standard should be a technical requirement for acquisition. In our opinion, both this conclusion and the handling of the acquisition of the various computer facility components and the office automation (OA) equipment by piecemeal instead of on the basis of an overall in-depth analysis of UNIDO's needs and related planning may have affected the principles and procedures on competitive bidding and (or) on calling for competitive proposals.

52. Our audit revealed that quite a number of Office Automation and Peripheral Equipment have been purchased from WANG and OLIVETTI (See: Annex 1, Chapters 9 and 13, respectively). The main Contracts were however awarded to IBM, namely:

- the March 1989 Lease Agreement for Central Office Automation Equipment (IBM 9370) hardware and maintenance;
- the 1989 Instalment Payment Agreement for Central Office Automation Equipment software;
- the November 1989 Turn-key Contract for the Vertical Wiring and Installation of an IBM Token-Ring Backbone LWL Network in the Buildings D & E at the VIC;
- the December 1989 Agreement for Purchase/Lease of the Mainframe Computer Facility hardware and software;
- the April 1990 Agreement for Facilities Management;
- the October 1990 System Service Agreement for the Mainframe Computer and Peripheral Equipment.

53. We observed that for most of these contracts requests for competitive proposals had been sent to several companies and a number of proposals were received. These proposals were evaluated from technical and cost viewpoint. The evaluation was carried out in accordance with UNIDO's normal practice.

54. As regards the contract for the purchase/lease of the central office automation hardware, we observed that although the price quoted by WANG had been lower than the IBM one, the latter was presented as the best concept.
The Committee on Contracts was requested to consider the award of the contract to IBM on an urgent basis.

55. We feel that the argument adduced against selecting the WANG offer that the WANG environment within UNIDO Headquarters 'currently' had several shortcomings in compatibility between the PC and OA-CPU levels, is not satisfactory in view of the fact that UNIDO explicitly invited WANG to bid. Management recalled, in this connection, that compatibility was only one of the several criteria used in the detailed technical evaluation and that, in fact, in the overall rating WANG was placed as number 2 among the five firms that were fully analysed. In Management's opinion, there was, therefore, no reason to have excluded WANG from submitting a proposal, but it was still necessary and valid, subsequently, to state the shortcomings in compatibility.

56. Another argument used against selecting WANG, that UNIDO cannot afford to continue supporting two completely parallel electronic environments (IBM and WANG), also seemed, in our opinion, not quite convincing in view of the fact that UNIDO continued acquiring a lot of WANG machines, partly because of the commitment of UN Headquarters to WANG Systems and the close connection of the UNIDO Language and Documentation Service to UN New York. Management explained, in this regard, that

(i) the additional and recurring cost of integration of both environments was estimated at one P-3 and one GS staff;

(ii) the continued acquisition of WANG machines is exclusively for the use of the Department of External Relations, Public Information, Language and Documentation Services and these machines are not integrated with the data processing environment of UNIDO.

57. Bearing in mind that the acquisition of the central computer and office automation equipment was handled by piecemeal, we, furthermore, found the so-called urgent lease of the IBM 9370 computer questionable in view of the fact that:

(i) the agreement was signed in March 1989;

(ii) in August 1989 Management, when preparing the technical specifications for the mainframe computer facility, knew that by the end of 1990 the IBM 9370 would have to be removed from the VIC premises;

(iii) the circumstance of the "trade-in" of the IBM 9370 computer at the end of 1990 put IBM in a preferential position as against its competitors for the mainframe computer facility;

(iv) compared to these competitors, already the installation and commissioning of its 9370

computer at UNIDO Headquarters in 1989 gave IBM more and better opportunities for preparing its bid for the mainframe computer facility.

In this connection, we concur with the view expressed by the Chief, Internal Audit Unit in his Report No. 6/90 dated 29 May 1990 that the possibility that irregularities take place is a constant risk, but it becomes more of concern when purchases are very large or made in a hurry and whenever established controls and procedures are either weak or can easily be circumvented.

58. As for the central office automation software, we noted that the Contracts Committee at its meeting of 16 December 1988 stated that the software agreement would be negotiated either with IBM or 'another suitable company'. At its meeting of 6 March 1989 the Committee was explained that in order to achieve compatibility with the original equipment, the software should be purchased from IBM.

59. With regard to the IBM Token-Ring our audit revealed that, although as a general rule any technical specification that has the effect of favouring or eliminating particular firms or products should be prohibited, the specifications had been tailor-made by IBM for an IBM Token-Ring network and were not neutralized by UNIDO. Management sent out its proposal request using the front page of every one of the five parts of the specifications showing the Austrian State seal and the IBM trademark. UNIDO confined itself to adding its own address thus giving the other bidders cause for doubting or questioning the fairness of UNIDO's bidding procedure. In this connection, we refer to para. 63 of our Report of 31 May 1988 (IDB.4/3-PBC.4/12) where we observed that Management was in agreement with our recommendation that, in order to preclude any form of monopoly as well as any occasion of fraud, and to obtain optimum competitiveness, the specifications should always be carefully prepared, and Purchase and Contracts Sections and/or the Substantive Office should adduce evidence of the complete neutralization of brand or trade names, the use of which should be restricted to instances where there are no other satisfactory means of designating a required quality or performance. Management had stated that it had taken action in this respect.

60. As to the lease/purchase of the mainframe computer facility, we found that three proposals were received of which the IBM offer was selected as being the lowest technically acceptable one. According to calculations made by the EDP & OA Service the three offers would amount to:

IBM: AS 138,446,341
AMDAHL: AS 139,050,941
NAS: AS 139,083,344

As regards the license fees for MVS/ESA software, EDP & OA Service, however, for comparison reasons:

(a) with respect to IBM, calculated only 46 monthly payments of AS 636,131, totalling up to AS 29,262,026; and

(b) with respect to NAS and AMDAHL, took into account 54 monthly payments of AS 636,131 - i.e. the IBM price - totalling up to AS 34,351,074.

As explained by Management, the reason for this was that only IBM as part of its offer of a mainframe computer included a reduction to 46 monthly payments in respect of a lease for 54 months. NAS and AMDAHL did not offer the software required, but referred to the necessity of UNIDO acquiring this software directly from IBM. UNIDO's Secretariat took contact with IBM and obtained the price conditions for acquiring the software without the mainframe. On our question why no negotiations were entered into with NAS and AMDAHL with a view to having their 54 monthly payments brought down, Management explained that:

(i) it is unlikely IBM would have offered the same reduction in case UNIDO did not acquire the mainframe from IBM;

(ii) the technical evaluation of all proposals resulted in the exclusion of NAS and AMDAHL on technical grounds;

(iii) for these reasons it would have been pointless for the Secretariat to engage in negotiations with the excluded companies concerning better commercial conditions.

61. In connection with the 'omission' by NAS of any reference to the IBM 9370 hardware trade-in matter - i.e. one of the main reasons for rejecting the NAS bid, we reviewed the NAS proposal available at UNIDO. In the table of contents mention was made of a paragraph on the trade-in issue. The page which should contain the paragraph itself is missing. In view of the fact that at the opening of the proposals no immediate record - containing, inter alia, evidence of the completeness of the proposals - had been made, we could not ascertain whether the paragraph in question was missing from the beginning. Management explained in this regard that:

(i) there was no evidence that an additional page should have been missing in the NAS proposal;

(ii) while the table of contents referred to a paragraph "2.10 Trade-in 9370 VM Computer" in fact the proposal under paragraph 2.10 referred to spare parts while there was no paragraph referring to trade-in;

(iii) as the pages in the proposal were not numbered there was no reason to assume that anything had been omitted by the company;

(iv) this was subsequently informally confirmed by the company during the technical and commercial evaluation;

(v) moreover, as stated in the evaluation, the proposal from NAS of a mainframe facility was clearly more expensive than the proposal from IBM, even when disregarding the additional cost that would have to be borne by UNIDO for the continuing lease of the IBM 9370; if the lease costs of IBM 9370 were added the NAS proposal would be even more expensive.

62. In its final version of 7 December 1989, the agreement with IBM contained completely different contractual conditions and payment schedules as against the original proposal. Instead of a down payment of AS 5,125,000 due on 1 July 1990, UNIDO finally agreed to make:

(a) an advanced payment of AS 4,942,000 by 31 December 1989; and

(b) a down payment of AS 19,409,700 also by 31 December 1989. With a view to having full and proper compliance with the rules and principles on competitive bidding as well as on calling for competitive proposals, we asked why before awarding a contract such favourable payment conditions had not also been proposed to NAS and (or) AMDAHL. Management explained, in this respect, that:

(i) when it became possible for UNIDO to advance payments, namely in the first half of November 1989, the technical evaluation of the proposals received had been completed;

(ii) in the technical evaluation NAS and AMDAHL had been found not to be fully technically acceptable in view of serious doubts about their capability to deliver a turnkey project, i.e. the setting up of the operating environment and the management of the migration of the applications from the IAEA mainframe;

(iii) therefore there was no reason to re-open negotiations with NAS and AMDAHL concerning more favourable commercial conditions.

63. Furthermore, we observed that although, according to the Request for proposals, all offers had to be firm and valid for a minimum of ninety days, i.e. up to and including 4 January 1990, the EDP & OA Service noted in its Interoffice Memorandum of 24 October 1989 that the IBM offer was contingent on a decision being made and a contract signed by mid-November 1989. The EDP & OA Service felt that, although this was a difficult task and, of course, the UNIDO original target dates were later, it was in the best interest of UNIDO to try to meet the IBM dates if at all possible.

64. With respect to the Agreement for Facilities Management, our audit showed that IBM submitted by far the lowest bid. In view of:

(i) the comparatively low price quoted by IBM;

(ii) the uncomfortably low number of staff initially offered by IBM;

(iii) the very strong, influential, and questionable position IBM has got in UNIDO as vendor of the mainframe computer facility (hardware and software) and as contractor for the facilities management;

we are of the opinion that the implementation of both contracts needs very strong control from UNIDO. If UNIDO intends to keep its own mainframe computer facility running for a number of years, EDP & OA staff should be prepared in the shortest possible time to take over the facilities management as early as possible.

B. The Opening of the Bids/Proposals

65. Pursuant to UNIDO Financial Rule 109.20, all bids should be publicly opened at the time and place specified in the invitation to bid and an immediate record made thereof. We noted that the proposals received were not publicly opened and no immediate record was made thereof. The proposals were not date-stamped indicating when they were received. Management explained in this regard that Financial Rule 109.20 exclusively applies to formal competitive bidding. UNIDO does not engage in formal competitive bidding. Instead, as authorized by Financial Rule 109.18 which distinguishes between formal competitive bidding and the calling for competitive proposals, an informal procedure of inviting competitive proposals is followed as a matter of consistent practice both for the entering into contracts - as was done for the major EDP acquisitions - and for the placement of purchase orders. Management further explained that the established procedure in UNIDO's Contracts Section is to record the receipt of proposals which are thereafter kept in a locked cupboard to which only one contracts officer and one secretary have access. The cupboard is opened at the closing date and the proposals are examined immediately. An abstract of the commercial aspects is prepared by the Contracts Section and together with two copies of the proposal transmitted to the substantive office concerned for technical evaluation. One copy of the proposal and of the abstract is retained in the Contracts Section.

66. In our opinion, even for the procedure of calling for competitive proposals:

(i) The requests for proposals should state where and when the proposals will be opened;

(ii) The proposals received should be date-stamped;

(iii) All proposals should be opened in the presence of witnesses;

(iv) Representatives from any firm which submitted a proposal should be allowed to attend the opening of the proposals;

(v) At the opening of the proposals, the name of each firm which submitted a proposal should be read out;

(vi) Unless the request for proposals specifically state to the contrary, the total price of the proposal in the currency used should also be read out;

(vii) An immediate record of the opening of the proposals should always be made.

C. Contracts Committee

67. Pursuant to Financial Rule 109.17, the Contracts Committee shall render written advice to DDG/ADM or such other officials authorized under rule 109.16 on:

(i) All proposed contracts that involve commitments to a single contractor in respect of a single requisition or a series of related requisitions totalling US$40,000 or more (since 6 October 1989: US$70,000 or more);

(ii) Proposals for modification or renewal of contracts previously reviewed by the Contracts Committee;

(iii) Such other matters as may be referred to the Contracts Committee by the Director-General, DDG/ADM or such other officials authorized under rule 109.16. Where the advice of the Contracts Committee is required to be sought, no

commitment may be entered into before such advice is received. In cases where DDG/ADM, or such other official authorized under rule 109.16, decides not to accept the advice of the Committee, he or she shall record in writing the reasons therefor and refer the case to the Director-General for a decision.

68. We found that the Contracts Committee met regularly and tried to cope with the technical aspects of the submissions. A review of the files submitted to the Committee showed a substantial number of observations judiciously made by the Committee. The submissions to the Contracts Committee were not always made sufficiently timely.

D. Termination of the Agreements

69. With regard to the Mainframe Computer Facility a termination of the Agreement has only been stipulated:

(i) for non-compliance with the Agreement, and

(ii) in case of test failure.

70. As for the System Service Agreement, it has been stipulated that UNIDO may terminate the contract upon three months' prior written notice to IBM, the termination to become effective at the completion of the current charging period. The possibility of UNIDO becoming liable to pay adjustment charges is laid down in the same paragraph of the contract.

71. With respect to the Facilities Management Agreement, the termination clause contains the following:

(i) Either party may, by written notice to the other party, terminate the Agreement in the event of failure of the other party to comply with any of its terms and conditions, if such failure has not been corrected within forty-five days from the date of written notice having been given of the failure and of the intent to terminate. UNIDO may effect such termination with at least one month written notice while IBM may do so with six months written notice.

(ii) UNIDO may terminate the Agreement with six months written notice in case of a UNIDO request for a change which is essential for fulfilling its mission/responsibilities or which is essential for UNIDO's overall efficiency and productivity

- if IBM does not comply with such a request or
- if IBM does comply with such a request, however, at new conditions which constitute an undue demand on UNIDO.

(iii) In order to take into account the fiscal periods of UNIDO or major organizational changes which could affect the continuation of a Facility Management Agreement the parties agree that UNIDO may terminate this Agreement on December 31st, 1991 or on December 31st, 1993 by giving six months written notice, i.e. not later than June 30th, 1991 and June 30th, 1993, respectively.

(iv) If IBM fails to meet the Service Availability target of a major service more than three times in a calender year UNIDO may terminate the Agreement with six months written notice.

(v) In the event of termination according to any item of this article UNIDO agrees to return to IBM all of IBM's property and tools used for fulfillment of this Agreement and IBM specifically shall remove its properties from UNIDO's premises and shall remove all its service tools used for the Facilities Management operation but not acquired by UNIDO.

E. Penalty Clauses

72. We refer to paragraph 202 of our Report of 21 May 1990 (IDB.7/11-PBC.6/15) on the accounts of the biennium 1988-1989, where we observed that penalty clauses should have been stipulated, so that UNIDO would have been protected effectively against possible indemnification claims from a contractor due to the late or non-execution of contractual tasks by (an)other contractor(s).

73. With regard to the Agreement for Facilities Management, IBM in its proposal of 3 November 1989 agreed on the following penalty clause: "If IBM fails to meet the monthly Availability Service level target of 97 per cent UNIDO may require a penalty payment of 0.5 per cent of the applicable price per calendar year for each full per cent of actual Service Availability below the 97 percent goal. Total penalty payments per calendar year will be limited to a maximum of 3 per cent of the applicable price for that year." In the final Agreement this clause was substantially modified, as follows: "If IBM fails to meet a service target of a major service UNIDO may require a penalty payment of 0.03 per cent of the applicable fee per calendar year for each full per cent of the actual performance being below the target. Total penalty payments per calendar year will be limited to a maximum of 3 per cent of the applicable fee for that year." In a letter dated 1 March 1990 IBM explained in this connection that in principle it agreed to re-include penalty payments in case of non-achievement of the agreed service levels, as offered in its proposal of 3 November 1989, but in a modified form, as during the negotiations the number of measurements has been increased from 13 to 234.

F. Legal Advice

74. On 5 December 1988 the Chief, Legal Service and Legal Adviser/ODG commented on:

(i) the Stand Alone Term Lease Agreement for IBM Machines;

(ii) an Installment Payment Agreement, being a Supplement to the Purchase Agreement for IBM Machines.

He found most of the provisions reasonable and acceptable from a legal point of view. Some points however had to be clarified; others needed to be included in the agreement in addition to what had been proposed by IBM; other provisions had to be somewhat amended. His comments were properly taken into account.

75. On 6 December 1989 the agreement/contract with IBM for the 'Establishment of a UNIDO Mainframe Computer Facility' was also reviewed and commented

upon by the Chief, Legal Service and Legal Adviser/ODG. He found most of the provisions reasonable and acceptable from a legal point of view. Some points however had to be clarified; others needed to be included in the agreement in addition to what had been proposed by IBM; other provisions had to be somewhat amended. In the agreement/contract signed on 7 December 1989 the amendments proposed by the Legal Adviser were properly taken into account.

G. Computer Networking and Power Networking

76. We refer to the observations/recommendations we made in paragraphs 109 and 110 of our Report of 21 May 1990 (IDB.7/11-PBC.6/15), on the accounts of UNIDO for the financial period 1988-1989.

77. In July 1989 the Committee on Contracts agreed to recommend the award of a contract for the Computer Networking to the lowest technically acceptable bidder for AS 4,234,631. At a following meeting, the Committee expressed its serious concern that the facts originally presented to it had not been accurate. As regards the Power Requirements for the Computer Equipment in Buildings D & E, we noted that in August 1989 the Committee on Contracts was requested to recommend a waiver of competitive bidding and an award of contract to the aforementioned company for AS 979,819. It was told that in view of the time constraint Buildings Management Section had based its selection on two earlier bidding exercises (among which the one for the Computer Networking, mentioned above) whereby that company had submitted the lowest technically acceptable bid. The company concerned was the only one which would be in a position to deliver in time the approximately thirty km of cable. Furthermore, if the present power cable networking could be done simultaneously with the data cable networking, this would reduce the price of the present contract, resulting in a saving of AS 122,500. We noted, however, that the requisition for the power requirements of computer equipment had been submitted after the bidding procedure for the data networking was done. We pointed out that the possible combined execution of both contracts should explicitly have been indicated in the requests for quotations, so that all prospective bidders might, while working out their offers, have taken full account of that possibility, which might have affected their prices. In this connection, we referred to the recommendations we made in our Report of 31 May 1988 (doc. IDB.4/3; PBC. 4/12), paras. 66, 71 (v), and 85, on the accounts of UNIDO for the financial period 1986-1987.

SECTION 3. FISCAL MANAGEMENT

A. General observations

78. Our current audit did not indicate that the Secretariat should have sought at any moment to deliberately withhold from the Policy-Making Organs of the Organization any important budgetary or financial information on the EDP-system acquisition project.

79. The procedural shortcomings and deficiencies reported below should, therefore, be considered also in the light of:

(a) The inadequacy of the institutional fiscal management procedures and controls (budget, treasury, Accounts and Payments, certifying and approving officers, ...) to cope effectively with the complex and long-term financial and administrative implications of a major investment project consisting of the establishment of an in-house computer centre. In this regard we found that the Secretariat has tried to administrate the project in conformity with the applicable fiscal management principles and procedures but that the complexity of the project has apparently amplified already existing procedural weaknesses and shortcomings in several management areas of the Organization. These procedural shortcomings and weaknesses have, however, not been dealt with adequately by the Secretariat throughout the period 1987-1989.

(b) The serious time constraints (the transition from IAEA computer services; the redeployment of 1988-1989 regular budget resources; the approval by the General Conference of the programme and budgets for 1990-1991; ...) which, as already pointed out in an internal review report, obviously have led the Secretariat to take shortcuts in introducing its EDP system which was therefore not planned in a systematic and sufficiently transparent manner and was also implemented in a piecemeal fashion.

B. Budgetary planning and approval

80. We noted that measures to increase the efficiency and effectiveness of UNIDO activities through the systematic, widespread and integrated use of EDP, office automation techniques and teleprocessing, including the transition, during the plan period 1990-1995, from IAEA mainframe computer common service to full-in-house capabilities for EDP and office automation, have been put forward by the Secretariat already at an early stage and in an explicit manner in the medium-term plan for 1990-1995.

81. We found, however, that since the MIAC was not convened by the Chairman during the period September 1988 - February 1990, the special EDP and OA budgetary planning mechanism as set up by written instructions from the Director-General with effect from 1 January 1988, failed completely in practice.

82. Nevertheless, a series of informal presentations to and consultations with the Director-General has been made by the Department of Administration on the subject of the computerization programme throughout the year 1988 and the beginning of 1989. The estimated costs and budgetary implications of the project for UNIDO prepared for these presentations and consultations, however, were often succinct, partial and tentative, and sometimes elaborated also without full involvement of Finance and other Divisions concerned.

83. As a result:

(a) The information on EDP and OA activities planning provided to the Policy-Making Organs of the Organization during the period 1987-1989 mainly consisted of:

- the general information contained in the medium-term plan 1990-1995;

- the specific proposals in connection with the programmes and budgets for

1988-1989 (redeployment of appropriations) and 1990-1991;

- informal information/consultations in March/April 1989.

(b) The 1988-1989 regular budget appropriation redeployment proposals did not provide a complete, analytical statement of all requested EDP programme resources and, therefore, the exact amounts earmarked for this programme under various objects of expenditure of the final budget for 1988-1989 were not clearly specified and could not be identified by us.

(c) The EDP and OA budget proposals for 1990-1991, submitted to the General Conference in November 1989 were also inappropriate in several respects:

- As for the 1988-1989 appropriation redeployment proposals, the 1990-1991 budget proposals did not provide information on the commitments and estimates of other possible costs of the overall programme for subsequent bienniums;

- since, as our review disclosed, it was perfectly clear in October 1989 (when the bids for the mainframe package were received) that there would be a substantial shortfall of resources (US$4.7 million) in 1990-1991, these facts should, in our view, have been brought to the attention of the General Conference (GC).

84. Although, the Policy-Making Organs of the Organization had not been informed officially by the Secretariat, prior to the year 1990, on the overall cost estimates and the financial planning of the computerization project, and such complete and reliable overall cost estimates and budgetary funding plans for the whole multi-biennial programme were apparently not readily available at the Secretariat, preparatory implementation activities of the computerization programme were nevertheless initiated and major commitments against future fiscal periods were made during the year 1989, on the basis of redeployments of 1988-1989 resources, which were communicated in general terms to the PMO but on which no formal decision was taken by the General Conference. In our view, this course of action is questionable in the light of the scope of the Financial Regulations on budgetary approval authority (4.1 (b) and (c); 3.11; 3.12).

85. On the matter of seeking formal authority to incur additional expenditures on EDP, the Administration has stated that an important distinction should be made between the resources for EDP included in the 1988-1989 appropriations which was formally approved by the PMO's on one hand, and the additional resources needed to cover overexpenditures from economies for which the Secretariat sought formal authorization from the PMO's with documents PBC.5/11 and GC.3/CRP.6. That no action was taken by the General Conference does not nullify, according to the Administration, the fact that the Secretariat did make the effort to bring the matter to the attention of the PMO (GC.3/CRP.6) and to seek formal authorization to incur the expenditures.

86. We, however, cannot but conclude that the succinct presentation of the subject matter, in a Conference Room Paper, and without any reference to the inevitable financial commitments against future fiscal periods, did not meet the budgetary information and approval requirements stipulated in the Financial Regulations of the Organization.

87. The Administration explained also that the expected shortfall of resources for the EDP programme in 1990-1991 was not brought to the attention of the GC in November 1989 for three reasons: (i) the expected cost increases did not provide a complete and accurate picture of the additional resources required and consequently, it was not deemed appropriate to present the PMO with incomplete and, on hindsight, inaccurate estimate of the full cost of the EDP programme for the period 1990-1995; (ii) the correct procedure, in any case, was to bring the matter to the attention of the GC through the PBC and the IDB which the Secretariat followed through documents PBC.6/11 and IDB.7/31 and Add.1; (iii) the extremely limited time available to prepare a report on the matter from the time the cost increase became known in late October 1989 to the holding of GC.3 in November 1989.

88. In our view, precisely the combination of the advanced status of the EDP project preparation at the time of the General Conference Meeting in November 1989 and the expected shortfall of resources for the programme in 1990-1991, required an immediate and full disclosure of all programme and financial estimate particulars as well as formal consultation with and approval by Member States on the course of action to be followed by the Secretariat.

C. Budget implementation controls

89. Already in our audit observations for the biennium 1986-1987, we noted shortcomings and deficiencies in the certifying and approving officers budgetary control system, and, in our report on the accounts of the Organization for the fiscal period 1988-1989, we referred to frequent instances where expenditures - sometimes for sizeable amounts - had been incurred without prior reservation of funds and budgetary authorization in the prescribed, standard format of specific allotment advices.

90. Moreover, we concur with the conclusion of UNIDO's special internal review team that there is a regrettable ambiguity in the Financial Rules of the Organization on the matter of the authority to designate approving officers and that, in practice, this authority is still always being assumed, as in the past, by the Director, Financial Services Division (FSD), without express delegation of authority from either the Director-General or the DDG/ADM.

91. Nevertheless, our current examination revealed no formal irregularities, attributable to certifying or approving officers, in the expenditures for the EDP-programme recorded in the accounts for the 1988-1989 biennium as at 31 December 1989. The overexpenditures recorded in the accounts as at 31 December 1989, in our view, clearly relate first of all to the accelerated and enhanced EDP-programme implementation towards the end of the year 1989, and "advance" certifications for the 1988-1989 EDP-acquisition requisitions (leasing arrangements) apparently were made on the assumption that, as communicated to the PMO, sufficient funds would be made available in future bienniums through redeployments and savings.

92. In our analysis, the major flaws in the internal control system of the Secretariat in the

implementation phase of the EDP-programme primarily consist of:

(a) The circumstance that the MIAC, specifically designated by the Director-General to assume a central co-ordinating role in the budgetary and financial monitoring and control process of the EDP- programme implementation, defaulted completely but that, nonetheless, the programme was allowed to continue and was even accelerated and enhanced towards the end of the year 1989;

(b) The fact that, contrary to the requirement of the Financial Regulations and Rules of the Organization the Secretariat had not established procedures for the examination, approval, recording, accounting and reporting of commitments for future fiscal periods;

(c) The decision to accelerate and enhance the EDP programme implementation towards the end of the year 1989 without adequate budgetary and cash funding solutions for the EDP expenditures during 1990-1991 and subsequent bienniums.

D. Budgetary, accounting and financial reporting procedures

93. We found that the expenditures from January 1989 to October 1990 for the EDP acquisition programme against the budgetary resources of the Organization for the biennium 1988-1989 have been recorded correctly and completely in the accounts of the Organization and have also been reported on the financial statements of UNIDO for the biennium 1988-1989 as at 31 December 1989. Also, regular budget obligations raised in 1989 for the EDP acquisition programme were in accordance with the applicable, legislative conditions and criteria and were covered by appropriate obligating documents.

94. Nevertheless, major shortcomings exist in the UNIDO recording, accounting and reporting procedures for commitments against the regular budget appropriations for future fiscal periods, since our examination disclosed that most of the EDP acquisition project commitments at the end of the biennium 1988-1989 were not recorded in the accounts of the Organization and consequently also not reported, as required, as deferred charges on the UNIDO General Fund Financial Statement of assets, liabilities and fund balance as at 31 December 1989.

95. Financial Regulation 3.12 and Financial Rules 104.3 and 109.6 indeed stipulate in this regard that the Director-General - or the DDG/ADM - may enter into commitments for future fiscal periods, provided that such commitments: (a) are for activities which have been approved by the Conference and are expected to continue beyond the end of the fiscal period; or (b) are authorized by specific decisions of the Conference. The granting of approval to enter into commitments for which no appropriations have been made shall be subject to such limits and approvals as the Conference may prescribe. DDG/ADM shall maintain a record in the accounts of all such commitments.

96. Thus, the inadequate financial management of the EDP acquisition programme at its implementation phase is explained at least in part by the lack of proper and reliable financial information resulting from the general inadequacy of the existing commitments accounting and reporting procedures of UNIDO.

SECTION 4. GENERAL REMARKS

A. Scope of Audit

97. A complete evaluation of the financial propriety of the acquisition of the EDP-system normally also requires a judgment on a number of technical and technological aspects of the computer configuration chosen.

98. In our audit, we could not cover several purely technical and technological aspects of the EDP-system acquired. Besides, we feel that this exercise is rather part of the mission assigned to the "working group of independent experts" established upon decision IDB.7/Dec.26.

B. Procedural responsibility

(i) General

99. With regard to the structural weaknesses and deficiencies of the UNIDO fiscal management and control procedures, reference is made to the fact that, already in March-April 1988, the Legal Adviser of UNIDO has drawn the attention of the Director-General and the DDG/ADM "to Financial Rule 112.4 which authorizes the DDG/ADM in consultation with the Director-General to issue administrative instructions amplifying the Financial Rules. This is an important tool to streamline day-to-day financial administration and it is urgent to clear out the accumulated underbrush of old United Nations instructions, circulars, memos, etc. It is suggested that the DDG/ADM establish a timeable for the elaboration of such new administrative instructions". Similarly, we have pointed out in our report on the UNIDO accounts for the 1988-1989 biennium (document IDB.7/11 dated 21 May 1990, paras. 31-34 refer) that "the Secretariat of UNIDO, as a Specialized Agency operating already for some time now under its own Financial Regulations and Rules, has not yet issued its own finance and accounting manuals".

100. Measures should, therefore, be taken by the Secretariat at an early stage to enforce strict adherence to formal management and control procedures as well as the full documentation of all administrative proceedings and actions, at all levels of the UNIDO administration. In this regard, we refer also to UNIDO Internal Audit Unit's observation that "the possibility that irregularities take place becomes more of a concern ... whenever established controls and procedures are either weak or can easily be circumvented" (UNIDO Internal Audit Unit Report No. 6/90 of 29 May 1990).

101. We appreciate that efforts are indeed being made by the Secretariat in this area as, for instance, a UNIDO Finance Manual is now being prepared and the preparation of a UNIDO Accounting Manual is scheduled for the near future.

(ii) The EDP-system programme

102. As regards the EDP-system acquisition project in particular, we learned during our present audit that, as instructed by the Director-General, recommendations were to be formulated in 1990 by a special internal review team on the courses of action to prevent a recurrence of major procedural shortfalls while the Director of the Strategy, Policy and Planning Office, Office of the Director-General, was to assess the real EDP needs and to propose a practicable course of action, including recommendations on how to finance the

additional funding needed during the 1990-1991 and subsequent biennia.

103. We took note of the series of recommendations made by the special internal review team which include, inter alia, re-writing all the relevant administrative instructions; re-definition of the functions and responsibilities of certifying and approving officers; the use of technical co-operation project standards for internal UNIDO purposes; central programme monitoring and accounting; improvement of the financial status reporting mechanism; and strengthening the co-operation aspects of the budgetary process (cfr. documents IDB.7/31 and Add.1, outlining the measures that have already been taken by the Secretariat and those that will be put into effect shortly to ensure the proper financial and technical management of the programme and to avoid a recurrunce of earlier difficulties).

104. Given the specific scope of the current audit exercise and due to time constraints, these proposals and recommendations have not been examined by the audit team so far. We appreciate, nevertheless, the positive impact of the implementation of these recommendations on the efficiency and effectiveness of the fiscal management of the project, e.g., the new EDP accounts codes structure used also for the preparation and presentation of the budget proposals for the biennium 1992-1993.

105. We agree also with the Administration that UNIDO should continue designing still other appropriate tools in order to improve further the effective and transparant management of Headquarters (capital investment) projects.

106. Finally, we were informed by the Secretariat that the Director-General and the staff of UNIDO have initiated intensive consultations with Member States to keep them constantly informed of developments on the EDP programme so that they may take whatever action they deem appropriate on the matter.

C. Budgetary policy decisions

107. From the data of our financial propriety analysis, it is clear that an EDP-system acquisition project of the size and impact as undertaken by UNIDO could be executed by the Secretariat only: (i) by resorting to cost-increasing leasing arrangements; and (ii) because the decision of the General Conference on the reservation of fifteen per cent of the regular budget appropriations for 1988-19889, led to a sizeable "reserve" of appropriations towards the end of the year 1989.

108. In this regard, we wish to refer to our Report on the UNIDO accounts for the biennium 1988-1989 (Doc. IDB.7/11 of 21 May 1990, paras. 56 and 60 refer) where we warned in general against possible financial derailments as a result of the understandable practice of the Administration maximizing regular budget programme implementation efforts at the time of the release of the fifteen per cent appropriation reserve balance towards the end of the biennium.

109. In our view fiscal management of the EDP acquisition project was marred at least partly by the urge of the UNIDO Secretariat to maximize regular budget programme spending (with obligations in respect of multi-biennial lease contracts) towards the end of the year 1989 in order to utilize the remaining fifteen per cent appropriation reserve balance to the maximum extent possible. Proper fiscal management, however, would have required that financial obligations and commitments were postponed until a complete financial analysis of the project (cost elements, possible redeployments, economies, savings, ...) had been made and a realistic financial planning strategy established and approved.

110. In our opinion, policy decisions which aim at restricting the availability for obligation of approved budget appropriations should, in future be formulated in more effective but also operationally practicable terms.

ACKNOWLEDGEMENT

111. I wish to record my appreciation for the co-operation and the assistance extended by the Director-General and the Deputy Director-General for Administration as well as by their Officers and Staff during the special examination session of the audit team at UNIDO Headquarters.

Jeroom L.E. VAN de VELDE
Senior President of the
Court of Audit
Belgium
External Auditor

Brussels, 31 January 1991

Annexes: 2

Annex I

External audit paper on the results of the examination of the acquisition of an EDP-system for UNIDO

SECTION 2. PROCEDURAL RESPONSIBILITY - CONTRACTS AND PURCHASES

In this part we have verified whether all contracts and purchases concerned were entered into along the lines set out for UNIDO. In this regard we first want to recall the applicable regulations, rules, and instructions.

1. UNIDO Financial Rules and Regulations

1.1. Docs.:

GC.2/Dec.25 of 12 November 1987; GC.2/INF.4
UNIDO/DG/B.74, dated 8 April 1988;
UNIDO/DG/B.74/Amend.1, dated 6 October 1989

Rule 109.16 Authorized officials

(a) Contracts for the purchase, rental or sale of services, supplies, equipment or other requirements shall be entered into on behalf of the Organization only by officials duly authorized for the purpose. Purchasing, renting or selling activities include, in addition to the entering into of contracts, the invitation of proposals or tenders and negotiation with potential suppliers or purchasers on the basis of detailed specifications.

(b) Unless otherwise directed by the Director-General, DDG/ADM or officials duly authorized by DDG/ADM shall be responsible for all purchasing, renting or selling activities on behalf of the Organization.

Rule 109.17 Contracts Committee

(a) A Contracts Committee shall be established to render written advice to DDG/ADM or such other officials authorized under rule 109.16 on:

(i) All proposed contracts that involve commitments to a single contractor in respect of a single requisition or a series of related requisitions totalling US$40,000 or more [since 6 October 1989: US$70,000 or more];

(ii) ...

(iii) Proposals for modification or renewal of contracts previously reviewed by the Contracts Committee;

(iv) Such other matters as may be referred to the Contracts Committee by the Director-General, DDG/ADM or such other officials authorized under rule 109.16.

(b) The composition of the Contracts Committee and its terms of reference shall be determined by the Director-General.

(c) Where, under the preceding provisions of this rule, the advice of the Contracts Committee is required to be sought, no commitment may be entered into before such advice is received. In cases where DDG/ADM, or such other official authorized under rule 109.16, decides not to accept the advice of the Committee, he or she shall record in writing the reasons therefor and refer the case to the Director-General for a decision.

Rule 109.18 Formal bidding or calling for proposals

(a) Except as provided in rule 109.19, contracts for the purchase or rental of services, supplies, equipment and other requirements shall be awarded after the conducting of formal competitive bidding or the calling for competitive proposals. Tenders of bids shall be invited by advertising by the publication or distribution of formal invitations to bid. Where the nature of the work involved makes it appropriate, competitive proposals shall be called for, and a comparative analysis of such proposals shall be kept on record.

(b) Invitations to bid and calls for proposals shall normally be issued on a wide international basis, taking into account the existence of possible sources for procurement. ...

Rule 109.19 Exceptions to formal bidding and calling for proposals

Contracts may be awarded without inviting bids or calling for proposals when:

(a) The proposed contract involves commitments of less than US$15,000 (US$20,000 since 6 October 1989), provided that the award is made after an assessment of competitive quotations, based on conformity with specifications, delivery schedules and prices or comparative prices, where available.

(b) The prices or rates are fixed pursuant to national legislation or by regulatory bodies.

(c) A standardization of supplies or equipment has been approved on the advice of the Contracts Committee, which renders competition impracticable.

(d) The exigency of the activity concerned does not permit the delay attendant upon the issue of invitations to bid or calls for proposals.

(e) The proposed contract relates to the purchase of proprietary articles or perishable supplies.

(f) The proposed contract relates to professional services other than staff services.

(g) DDG/ADM determines that formal bidding or calling for competitive proposals will not give satisfactory results. In such cases, appropriate reasons shall be recorded in writing and transmitted to the Director-General by DDG/ADM.

Rule 109.20 The opening of the bids

All bids shall be publicly opened at the time and place specified in the invitation to bid and an immediate record made thereof.

Rule 109.21 The awarding of contracts

(a) When the bids have been opened and when proposals have been received, their technical acceptability and cost shall be assessed and compared. A comparative written assessment shall serve as the basis for awarding the contract and shall be examined by the Contracts Committee before the Committee renders its advice as required under rule 109.17.

(b) Contracts shall be awarded to those firms or institutions that have tendered the lowest, technically acceptable bid or submitted the lowest, technically acceptable proposal, provided that where the interests of the Organization so require, all bids or proposals may be rejected by DDG/ADM or such other official authorized under rule 109.16, who shall record in writing the reasons for the rejection of the bids or proposals and determine whether new competitive bids or proposals should be invited, or a negotiated contract should be entered into.

(c) ...

Rule 109.22 Purchases to be made in writing

(a) Written contracts or written purchase orders for goods and services shall be established, as appropriate, for every purchase from a single contractor or vendor in an aggregate amount of US$2,500 or more for one or more items.

(b) Written contracts and purchase orders shall specify in detail:

(i) In the case of supplies or equipment, the exact description of the goods, the quantity required, the price of each article, the conditions of delivery and the terms of payment;

(ii) In the case of services other than staff services, the nature of the services, the period covered, the conditions of fulfilment, and the amount and terms of payment.

(c) DDG/ADM, or such other officials authorized under rule 109.16 in agreement with DDG/ADM, may wave the requirements of any part of this rule in certain cases, such as supplies for the maintenance of buildings, where one blanket purchase order might be issued covering a variety of items. In the event of such a waiver, a written record shall be established to ensure that:

(i) The vendor and purchaser are in agreement as to what is being purchased;

(ii) An itemized record of sale and receipt is prepared at the time of delivery;

(iii) Payment is based on the itemized record of sale and receipt referred to in (ii) above.

Rule 109.23 Advance payments

When normal commercial practice or the best interest of the Organization so requires, contracts and purchase orders may be made on behalf of the Organization that provide for a payment or payments on account in advance of the delivery of goods or the performance of contractual services. Whenever an advance payment is agreed to, the reasons therefor shall be recorded and to the extent possible a warranty from the Government or a bank guarantee obtained (see rule 107.7 on other cash advances and rule 107.10 (d) on progress payments).

Rule 109.24 Written findings

Each determination or decision required from an authorized purchasing officer by the provisions of the present Financial Rules shall be supported by the written findings of such officer in the form of a statement of explanation. Such a statement shall be placed in the appropriate case file maintained by the responsible department or office. Also, a copy thereof shall accompany the related obligating documents submitted to DDG/ADM.

1.2. Compliance with the Financial Rules and Regulations

. Pursuant to UNIDO Financial Rule 109.20, all bids should be publicly opened at the time and place specified in the invitation to bid and an immediate record made thereof. We noted that the proposals received were not publicly opened and no immediate record was made thereof. The proposals were not date-stamped indicating when they were received.

. Management explained in this regard that Financial Rule 109.20 exclusively applies to formal competitive bidding. UNIDO does not engage in formal competitive bidding. Instead, as authorized by Financial Rule 109.18 which distinguishes between formal competitive bidding and the calling for competitive proposals, an informal procedure of inviting competitive proposals is followed as a matter of consistent practice both for the entering into contracts - as was done for the major EDP acquisitions - and for the placement of purchase orders. Management further explained that the established procedure in UNIDO's Contracts Section is to record the receipt of proposals which are thereafter kept in a locked cupboard to which only one contracts officer and one secretary have access. The cupboard is opened at the closing date and the proposals are examined immediately. An abstract of the commercial aspects is prepared by the Contracts Section and together with two copies of the proposal transmitted to the substantive office concerned for technical evaluation. One copy of the proposal and of the abstract is retained in the Contracts Section.

. In our opinion, even for the procedure of calling for competitive proposals:
(i) The requests for proposals should state where and when the proposals will be opened;
(ii) The proposals received should be date-stamped;
(iii) All proposals should be opened in the presence of witnesses;
(iv) Representatives from any firm which submitted a proposal should be allowed to attend the opening of the proposals;
(v) At the opening of the proposals, the name of each firm which submitted a proposal should be read out;
(vi) Unless the request for proposals specifically state to the contrary, the total price of the proposal in the currency used should also be read out;
(vii) An immediate record of the opening of the proposals should always be made.

2. Contracts Committee - Its Functions and Procedure

2.1. Doc. UNIDO/DG/B.22, dated 20 March 1986.

(a) Functions:

(i) Financial Rule 109.17 (a).

(ii) Purchasing, renting or selling activities include, in addition to entering into contracts, the invitation of proposals or tenders and the negotiation with potential suppliers or purchasers on the basis of detailed specification. These activities therefore shall be reviewed by the Committee.

(b) Procedure:

(i) Proposals to enter into contracts that would involve commitments ... exceeding the limits specified... should be submitted by the Purchase and Contracts Service (now: the Purchase Section and the

Contracts Section) to the Secretary of the Committee as far in advance of the time at which the contract is required as possible. The submission shall be supported by documents showing the justification for the proposed commitment. The Secretary shall inform the Chairman and Members of the Committee of the steps taken to invite proposals, the main contents of the proposals and any other relevant details.

(ii) The presence of three Members, including the representatives of the Financial Services Division (the Cairman or alternate representative) and Legal Service shall constitute a quorum.

(iii) Every effort should be made to reach a decision by consensus. If a consensus is not reached, the various views of Members present shall be presented in writing to the Director of Administration. (DDG/ADM since 1 July 1986)

(iv) Records shall be kept of the meetings and decisions of the Committee. Copies of the records shall be sent to the Director of the Division of Administration (DDG/ADM), the Head of the Purchase and Contract Service, and the Chief of the Internal Audit Service as well as the directors of the divisions concerned with particular decisions.

2.2. Compliance with Procedures and Terms of Reference

The Contracts Committee met regularly and tried to cope with the technical aspects of the submissions. A review of the files submitted to the Committee showed a substantial number of observations judiciously made by the Committee. The submissions to the Contracts Committee were not always made sufficiently timely.

3. The Management Information Advisory Committee (MIAC)

3.1. Doc. UNIDO/DG/B.62, dated 10 December 1987
UNIDO/DG/B.62/Amend.1, dated 26 September 1988

(a) Since 1 January 1988 MIAC replaced the Computer Management Committee (CMC) established by Director-General's bulletin UNIDO/DG/B.15 of 6 February 1986.

(b) Chairman: DDG/ADM.

(c) Terms of Reference

(i) To advise the Director-General on the policy to be followed and the action to be taken by UNIDO to ensure the efficient and cost-effective acquisition and use of computer resources for the Organization as a whole.

(ii) To recommend to the Director-General general priorities governing the acquisition and use of computer resources for the Organization as a whole.

(iii) To recommend to the Director-General the overall budget of the Organization for computer resources and, within the approved budget, to recommend to the Director-General the allocation of such resources to each programme manager.

(iv) To request and review reports from the Management Information Technical Committee (MITC) and staff of UNIDO related to the use of computer resources ...

(vi) To review recommendations of MITC for the acquisition of computer hardware and software, including word processors and personal computers; to assign priorities within the available budgetary resources and, within those priorities, to approve (?) such acquisition.

(vii) To review periodically the scope of MITC and to suggest to the Director-General modifications to its terms of reference.

(viii) To carry out any other functions related to the use of computer resources as directed by the Director-General.

3.2. Compliance with these Terms of Reference?

MIAC did not meet between September 1988 and February 1990, i.e. a seventeen-month period during which virtually all major decisions regarding the acquisition of the mainframe and related hardware and software were made. Consequently, an important advisory as well as internal control mechanism failed. In view of the fact that MIAC had to report to the Director-General, one can wonder why no steps appeared to be taken with a view to having activated this control mechanism.

4. The Management Information Technical Committee (MITC)

4.1. Doc. UNIDO/DG/B.62, dated 10 December 1987
UNIDO/DG/B.62/Amend.1 of 26 September 1988

(a) Since 1 January 1988 MITC replaced the Computer Technical Sub-Committee and the Office Automation Sub-Committee, established by the Director-General's bulletin UNIDO/DG/B.15 of 6 February 1986.

(b) Chairman: The Chief, Electronic Data Processing and Office Automation Service (DA/EDP)

(c) Terms of Reference

(i) To identify areas in which standards related to computer technology should be adopted by UNIDO, to make recommendations on such standards to MIAC and to review and adjust these standards continuously in the light of the latest technological developments.

(ii) To assess individual computer budget submissions from departments in UNIDO, to determine the additional technical resources that would be required to support those submissions and to make recommendations as appropriate to MIAC.

(iii) To evaluate from a technical point of view all requests for the acquisition of computer hardware and software, including word processors and personal computers, taking account of technical standards and their applicability to the resources and policy of UNIDO; to report to MIAC its findings and recommendations on the most appropriate and cost-effective means of fulfilling user needs.

(iv) To evaluate reports of consultants and staff of UNIDO on computer-related matters and to report its findings and recommendations to MIAC.

(v) To convene or appoint such working groups as may be required to undertake specific technical evaluations.

(vi) To review and evaluate any other computer-related matters referred to it by MIAC.

4.2. Compliance with these Terms of Reference

MITC met regularly.

5. Chronology of some Events and Actions

5.1. Director-General's memorandum to Deputy Directors-General of 19 September 1986

(a) Purposes for which UNIDO should use computers:

(i) To provide management with information for planning and decision making;
(ii) To carry out administrative tasks;
(iii) To provide computer experience to developing countries;
(iv) To assist in techno/economic research;
(v) To assist in the processing of documents and publications;
(vi) To disseminate industrial information.

(b) For the immediate future (i.e. through the 1988-1989 biennium):

(i) UNIDO will rely significantly upon the mainframe computer facilities operated by IAEA as a common service for VIC Organizations. During this period, however, there should be a minimum net growth in the total usage of these facilities.

(ii) At the same time, a detailed in-house study should be carried out by UNIDO to prepare specifications for UNIDO computer facilities (hardware, software, staff, facilities and supplies) that could take over the bulk of or all services provided to UNIDO by IAEA.

(iii) A cost-benefit analysis of this option should be made and, if the results are positive, appropriate provisions should be included in the programme of work and related budget estimates for 1990-1991.

(iv) A detailed schedule of actions to effect a gradual transfer of computer work from IAEA to UNIDO over the period 1988-1991 should be prepared for inclusion in the Medium-Term Plan 1990-1995.

5.2. In November 1987 the Computer Management Committee (CMC) submitted to the Director-General the report on 'Computer Facilities', prepared by an in-house working group.

(a) Its considerations were (inter alia)

(i) As a specialized agency of the UN, UNIDO has its own budget and its own decision-making processes. However in one crucial area of modern management, computer applications, UNIDO is not free to take its own decisions.

(ii) UNIDO is using 20 to 25 % of the IAEA Computer System (IBM 3081), at an annual cost of over AS 12 Million; at UNIDO Headquarters 96 terminals are linked to that system.

(iii) As for its office automation, UNIDO already has five WANG minicomputers with 123 workstations, electronically linked, sharing over 40 networked printers, each accessible from every workstation. Three of the minicomputers are general purpose computers, so-called VS-CPUs, while the other two are actually word-processor clusters with somewhat limited general purpose capabilities.

The three VS computers are tuned to do a job mix of primarily interactive applications, word-processing, and communication. A linkup between the network of WANG equipment in UNIDO and its mainframe applications does not currently exist, but is planned for 1989.

WANG's electronic mail software is currently only installed on two of the minicomputers.

The most widespread software running on all WANG equipment is without a doubt word-processing. Several years ago, WANG developed a special version of the ASCII character set, called "world language", specifically for the organizations of the UN system. The use of this character set, and appropriate WANG keyboards has provided the most straightforward and easy-to-use method of entering text in French and Spanish, as well as English. WANG equipment also supports Cyrillic, Arabic, and Chinese word-processing, although UNIDO is not yet fully equipped to make use of these possibilities.

In 1985 UNIDO acquired a fourth generation relational database package called "PACE", and since then has had four applications programmed by subcontractors of the hardware supplier. One of these links UNIDO and UNOV Personnel Services with UNIDO Payments Unit in a single application. Potentially, "PACE" could play a significant role in the automation of UNIDO - as indeed its original proponents had in mind.

Its limitations in UNIDO are, however, twofold:

(a) insufficient on-line disk storage and main-storage processing capacity to be able to handle further applications;

(b) the total absence of a development support service in UNIDO. At a minimum, the Office Automation Unit in EDP would require one person capable of training and assisting users wishing to develop and maintain their own applications if PACE is to be properly and effectively used.

(b) The following recommendations were made (inter alia)

(i) In order to control its own work, UNIDO must have its own mainframe computer in 1990:

(a) At least on the order of an IBM 4300 capable of duplicating the service offered by IAEA; such a system would, however, have few advantages, since it would have little or no scope for expansion to meet increased usage.

(b) Better would be an IBM 3270 type mainframe to which 300 workstations could be linked;

(c) Or even better an IBM 3090 120E.

(ii) UNIDO also needs 800 workstations, 300 of which to be linked to the mainframe computer. What is needed is a series of personal computers that can run word-processing or data-processing software, and to which data can be down-loaded from the mainframe for specific analyses as required. Even if a WANG workstation were required for connection to one of the WANG CPUs, it should be of a kind that could be connected if required to a mainframe.

(iii) UNIDO further needs a minicomputer for statistical data-processing and analysis, econometric work, forecasting, modelling and scenario work in Studies and Research Division. Another minicomputer might be needed (but not in the immediate future) for Industrial Information.

(c) Costs

It was mentioned that there has been no slackening in the pace of technological change, which has had starling effects in the field of computer hardware. Computers continue to become cheaper, smaller, and more powerful. The integrated circuit (IC) continues to hold more information, to be more sophisticated in its functions, and to cost less. Prices for hardware tend to fall at a rate of about 30 per cent each year.

In the report, a comparison was made of the prices of two equivalent systems, one from IBM and one from NAS. It appeared the NAS prices were substantially lower than the IBM ones.

	IBM	NAS
Yearly cost of		
(i) hardware, software, and maintenance	$952,177	$641,528
(ii) salaries of systems and operations staff	$347,000	$347,000
(iii) other operational costs (electricity, insurance, supplies, communications)	$130,000	$130,000
Total yearly cost	$1,429,177	$1,118,528

The costs for the hardware are based on lease periods for the IBM and NAS machines of 54 and 60 months, respectively. After this period, the machines would become property of UNIDO. For the software the costs are based on a leasing period of 36 months, after which the software would also become the property of UNIDO.

There would be additional costs for the purchase of workstations to raise their number from the current level of about 200 to the ideal of 800. Spread over five years this could cost about $360,000 per year.

(d) Our comments

Though the report of the in-house working group can be seen as a first exercise, it can hardly be called a detailed in-depth in-house study that could be the basis for hiring a consultancy firm and for indicating the precise terms of reference of the consultant's mission.

5.3. First meeting of MIAC on 20 January 1988

MIAC endorsed the need for a gradual transition to a more flexible computer facility fully controlled by UNIDO, and agreed that a provision for the transition should be included in the Medium-term Plan 1990-1995 including cost estimates. The aim was to complete this transition within the 1990-1991 budget period.

5.4. Second meeting of MIAC on 16 March 1988

MIAC discussed the need for an independent study of the feasibility of establishing UNIDO's own computer system. It was agreed that a consultant study was needed to assist UNIDO in planning and to advise on the overall information needs of UNIDO.

5.5. In May 1988 details of dataprocessing (DP) and office-automation (OA) requirements for support of a UNIDO-managed computer facility were sent to the Director-General by the Acting Chief, DA/EDP.

1990-1991	1992-1993	1994-1995	Total
$4,087,334	$3,469,446	$3,469,446	$11,026,226

The figures in this proposal were based on: (i) the IBM offer for leasing of IBM Hardware and Software; (ii) the acquisition of 70 Workstations and Printers for replacement of obsolete equipment; (iii) the acquisition of two Central Processing Units (CPU), 250 Workstations and 110 Printers; (iv) their maintenance costs.

The proposal did not include the cost of staff, network development, installation of facilities and their management.

5.6. Computer Policy Guidelines

Doc. UNIDO/DG/B.84, dated 19 July 1988, superseding the Director-General's memorandum to DDGs of 19 September 1986

This document develops the following issues.

(a) Provision and allocation of resources

Resources for computerization are appropriated by the governing bodies of UNIDO. On the basis of these bodies' decisions, MIAC recommends allotments to be established for computer services.

It reviews the status of these allotments periodically, introducing changes as necessary to ensure the most efficient use of funds. Requirements for computer hardware and software should therefore be planned in detail and submitted to the Director-General through MIAC as part of the budget preparation cycle.

(b) Acquisition of computer resources

Whenever possible, UNIDO should use hardware and software that it either owns or controls. To this end, UNIDO should acquire and install sufficient hardware and software to meet its needs. External resources should be used only when it is believed they will lead to greater efficiency and cost-effectiveness. Wherever possible, it is preferable to use standard hardware components and software packages rather than to develop one-time or in-house solutions.

All requests for computer resources at UNIDO Headquarters - including requests for resources which are to be acquired through project funds and which must remain at Headquarters - must be addressed in writing to the Chairman of MITC.... and where appropriate, submitted to MIAC. Requests subsequently approved by MIAC are then passed to the Electronic Data Processing and Office Automation Service (DA/EDP), which will make all necessary arrangements, including financing, requisition, installation and programming, within the resources available. This policy applies to all requests, irrespective of source of funding.
...

To help staff prepare requests for computer resources and minimize delays in their processing, DA/EDP will prepare the following guides and regularly make recommendations for updating them, for approval by MIAC.

(i) Workstation acquisition guide;
(ii) Software acquisition guide;

(iii) Software development guide;
(iv) Major applications planning guide;
(v) Communications and networking guide;
(vi) Guide to legal issues in computer-related questions (to be prepared in conjunction with the Legal Service);
(vii) Users' guide to UNIDO computer applications.
...

(c) Analysis and applications programming

MIAC will exercise central control over analysis and applications programming to ensure compatibility between systems, continuity, standardization and the maintenance of supporting documentation in order to achieve the most efficient use of staff and other resources.
...

(d) Computer inventories
...

(e) Replacement of resources

When seen to be cost-effective, UNIDO will establish policies for automatic upgrading of software and leased or rented hardware. In any event, budget allocations should be made for the replacement of all computer hardware and packaged software five years after the date of original purchase.

In planning the staffing and operations of DA/EDP, the need for the ongoing renewal of major applications developed in-house and their replacement at five-yearly intervals should be taken into account.

(f) Maintenance

Maintenance arrangements should be made for all computer equipment, but the number of maintenance contractors should be limited in order to achieve economies of scale. All software acquired should be properly licensed or registered, thereby permitting low-cost upgrading and support from the supplier.

(g) Security
...

(h) Training

As the efficient and cost-effective use of computers requires the thorough and ongoing training of users, in-house and external job-related training will be provided in the use of hardware, software and applications as an integral part of the investment in such resources. Wherever cost-effective, in-house training will be preferred to external arrangements. MIAC will ensure that budgetary provision is made for such training.

(i) Help Centre

A Help Centre will be established within DA/EDP in order:

(i) To assist users in selecting hardware, software and applications appropriate to their requirements;
(ii) To demonstrate hardware, software, applications and communications tools;
(iii) To assist users when they have problems with hardware, software, applications and communications tools;
(iv) To provide in-house training, and sources of in-house computer skills that may be drawn on as necessary.

(j) Test and demonstration installations

All new types of hardware and software being considered for acquisition by UNIDO for the first time should first be installed and tested in DA/EDP.

5.7. The GMO Consultancy Report on the Information Needs of UNIDO dated 31 August 1988

GMO estimated the requirements as follows, (inter alia):

(i) The acquisition of a central computer with three to four times the capacity of the present IAEA supplied services.
(ii) The software necessary to operate this equipment, to develop an institution-wide data base, to connect this computer to local equipment and software tools for the development of new applications and for access to the data base by the end-user.
(iii) Personnel to operate the center (1 manager, 2 set-up persons, 3 systems programmers, 7 operators).
(iv) Five additional units for office automation to connect 160 workstations.
(v) Five additional staff members to operate the office automation equipment.
(vi) Additional personnel to improve the development process and to provide professional support to individual users (8 analysts and programmers).
(vii) Four persons to provide advice and support for the end-users on a continuous basis.
(viii) One highly qualified person each for Data Management, Standards, Methods and Tools.
(ix) A training programme that involves every manager and every office-bound staff member.
(x) Site preparation for the central computer.

Hardware would be financed on a 54 months leasing plan; software would be financed on a 36-payments plan; staff would be added as it becomes necessary.

Total investments required were estimated at, in million AS:

1989	1990-1991	1992-1993	1994-1995
9.5	94.2	117.9	104.1

Not shown in these figures is the fact that towards the end of the period replacements of workstations will become necessary, new software will become available, etc.

At the end of the period of 3 biennia (1995) every office-bound staff member and manager at UNIDO should also be using a workstation to access information. This would entail the acquisition of 1,100 workstations, number to be reached in 1994 at an annual rate of about 150.

GMO concluded that the measures proposed would very rapidly bring about some savings. Benefits from the controlled spread of office automation into all offices could be ten per cent of all personnel costs. From the introduction of the institutional data base savings of five per cent were expected. The savings would increase as the effect of the measures penetrates the entire institution. The savings would exceed the yearly proportion of the necessary investments already during the third year; during the fourth year the accumulated savings will begin to exceed the accumulated cost.

5.8. In September 1988 MIAC discussed the aforementioned GMO report and recommended that on Office Automation UNIDO:

(a) should commit to IBM, in line with the plans to acquire a mainframe which should be IBM compatible;

(b) should proceed with: (i) the acquisition of 70 OA workstations; (ii) the purchase of an IBM CPU; both requirements to be financed from the 1988-1989 budget allocations.

5.9 Our comments

. We noted in this regard that maybe already end 1987 and certainly in 1988 Management on the basis of technical analysis had reached the conclusion that to preserve the investment of existing computer applications, data processing should be IBM compatible or, in other words that the prevailing industry standard should be a technical requirement for acquisition. In our opinion, both this conclusion and the handling of the acquisition of the various computer facility components and the office automation (OA) equipment by piecemeal instead of on the basis of an overall in-depth analysis of UNIDO's needs and related planning may have affected the principles and procedures on competitive bidding and (or) on calling for competitive proposals.

In the following part of this paper we present our findings by purchase/contract.

6. Lease Agreement for IBM 9370

6.1. Specifications for the required equipment

In June 1988 specifications for required OA equipment were defined by EDP & OA service giving following scope of equipment.

(a) Workstations: between 85 and 100 new workstations were required, 46 of which were to replace obsolete WANG word processing workstations.

(b) Shared Printers: between 15 and 20 new laser printers with a capacity of around ten pages per minute were required, accessible from the IAEA IBM mainframe, the UNIDO OA central CPU, and from PCs without user intervention.

(c) OA Central Processor: an OA central CPU was required able to support a number of specified tasks and also able to support full network communication between itself, the IAEA mainframe, and the mainframes of the ICC in Geneva, and NYCs in New York. The CPU should further be able to network with UNIDO's WANG VS CPUs in order to exchange documents and electronic mail.

(d) Local Workstation Printers: approximately 70 PC-printers were required, i.e. a local workstation printer for almost all workstations listed above.

6.2. Requests for proposals were sent to thirteen firms. Closing date was 2 September 1988.

6.3. Nine bids were received.

	AS	$	
WANG		1,103,281	
IBM	16,405,533	1,252,331	
SIEMENS	16,974,765	1,295,784	
DIGITAL	18,926,275	1,444,754	
OLIVETTI	8,085,045	617,179	Mini-Computer-System
DATASERVICE	9,615,382	733,999	for IBM workstations
	9,846,665	751,654	for APPLE workstations
MBA		784,315	

APPLE COMPUTER offered unit prices only
RANK XEROX offered unit prices for laser printers only

6.4. Technical evaluation report dated 11 November 1988 and prepared by UNIDO EDP & OA Service on the data received.

(a) Considerations: (inter alia)

(i) With regard to the level of integration being offered:

No firm submitted an offer providing total integration within both of UNIDO's current environments (i.e. the IAEA IBM mainframe and the WANG VS/OIS network).

IBM came closest to the ideal, by offering total integration within the IBM environment, meaning nothing more and nothing less than that a user sitting at a workstation as offered in the IBM proposal would have a single user interface giving him access to mainframe, OA-CPU, and PC applications, all at the level a dedicated user of each of these three areas would enjoy.

WANG came in second best, offering total integration with the rest of UNIDO's current WANG environment, but this environment currently had several shortcomings in compatibility between the PC and OA-CPU levels.

UNIDO cannot afford to continue supporting two completely parallel electronic environments, one for text processing and another for information management, and providing two workstations in more and more offices, or the continued separation between groups of staff having access to different types of workstations.

The OLIVETTI offer, while seeming at first glance to provide a 'central solution', in fact was more a 'network-server' solution; it further appeared that the OLIVETTI central CPU tools were not as fully developed as those of the other firms offering central solutions.

(ii) As for the level of support complexity:

IBM alone offered the possibility of reducing the number of operating environments required in UNIDO.

Since choosing WANG perpetuates the status quo, neither reducing, nor increasing the number of vendors or concepts, it was the second best choice, by far.

(iii) With respect to the work in the CPU Room:

WANG was the only firm to provide a finished CPU-room layout proposal in their offer. Although dropped as a cost savings measure recommended by General Services, the concurrent disconnection of the two old existing OIS-CPUs scheduled for

replacement during the biennium 1988-1989 would permit the WANG proposal to be carried out without a current enlargement of the room.

With IBM the EDP & OA Service had a very concrete idea of the CPU-room work involved, since it carried out a study with this firm in connection with a recommendation by the former DDG/ADM in April 1988.

(iv) As for the (re-)cabling:

Only WANG and IBM can use each other's cables, and since redistribution would only be replacing existing WANG equipment it can be said that unless the IBM or WANG central approaches are taken, recabling would have to be undertaken for all offices with current cabling, into which new or replacement equipment is installed. At least 50% more cabling would be required if central concepts other than WANG or IBM were to be implemented.

(v) On training requirements for OA staff:

Since the OA staff were familiar only with WANG, considerable training would be required for all other types of equipment.

(vi) On training requirements for end-users:

This is one area where APPLE was without a doubt superior to all its competitors. WANG had the second best rating for a combination of two reasons: the fact that less user training was required because many UNIDO staff were already familiar with WANG to varying degrees; and the WANG menu environment had also proven rather user-friendly. IBM offered what certainly appeared to be an equally, and hopefully even superior user-friendliness. Nevertheless, considerable initial user training would be required to adjust from the WANG environment.

(vii) As for the comparative cost over a 48-month period: WANG quoted in US-dollars, while the other firms quoted in Austrian Schillings. Exchange rate fluctuations would have an effect in the comparative cost of WANG to the other offers. The relationship of cost between the first offer (IBM) and the second best one (WANG) would not remain constant over the envisaged 48-month leasing period.

(viii) In general:

As pointed out by the task force examining the information processing needs of UNIDO in 1987 and reiterated so forcefully by the GMO Consultancy, UNIDO had no choice but to choose an IBM-mainframe-centred approach to its overall information processing needs.

(b) Recommendations:

Based on:
(i) the final overall rating of the offers;
(ii) the decision of the MIAC to commit to IBM for central hardware;
(iii) the unique opportunity to achieve integration into a single computer architecture now, before it is too late for UNIDO to afford it, thus perpetuating a dual environment,
...;
it was recommended to take steps to negotiate with IBM to acquire the central office automation equipment and to arrange for tests of the peripheral equipment in order to ensure its full functionality with the IBM central equipment before making a recommendation on the workstations and printers.

It was further recommended, without bias to the final choice of vendor for peripheral equipment, that five workstations (various models) and one central and two workstation printers be ordered with the central equipment.

As explained in its Interoffice Memorandum dated 11 November 1988, the EDP & OA Service chose the concept of an IBM 9370 central computer networked with the IBM mainframes of IAEA, ICC-Geneva, and NYCS-New York operating with intelligent workstations able to utilize the single user interface provided by the PROFS/PASF IBM software.

6.5. Contracts Committee

(a) Submission to the Contracts Committee

In the submission it was recommended not to purchase the equipment outright but to acquire it through a 48 month instalment payment plan. In this regard the Committee was requested to recommend that for the first twelve months, i.e. January to December 1989:

(i) a contract should be concluded with IBM, Austria totalling AS 3,008,544 ($240,684, at the official exchange rate of AS 12.5 in November 1988) for an IBM 9370-90 and 5 IBM PC various models (installation, hardware and software);

(ii) a Purchase Order be raised to SOFT-SWITCH, USA for US $75,000
(AS 937,500) covering the softswitch gateway to WANG and Application System;

(iii) a Purchase Order be raised to MBA, Austria for US$10,000
(AS 125,000) covering software packages.

The total amount for 1989 would be: AS 4,071,044 ($325,684).

(b) Meetings of the Contracts Committee on the subject

At its meeting of 18 November 1988 the Committee was requested to consider on an urgent basis the above submission which, however, had been presented to it only shortly before the meeting. Noting that full documentation had not been available in good time for the members to thoroughly review the subject matter, the Committee decided that a special ad hoc meeting should be held within the next few days.

It was explained that after careful consideration of the companies which had submitted proposals IBM had been selected as the best concept, although it was not the lowest bidder. After thorough evaluation only two companies had qualified for serious consideration, i.e. IBM and WANG. Reference was then made to the shortcomings experienced with the WANG terminals; e.g. they had not been able to carry out the tasks which had been foreseen. As for the urgency of the matter, the Committee was explained that it was hoped to install over 70 new terminals in various departments to replace over 40 existing WANG terminals (eventually leading to a target of 800 by 1994). Companies which had participated in the bidding process were being contacted to offer for equipment and software to fit with the concept chosen. It was planned to test these workstations in December when it was hoped to have the central

equipment installed. Reference was further made to a report by MIAC which provided the background information leading to the submission.

At its meeting of 22 November 1988 the Contracts Committee observed that the request should have been brought forward by the Contracts Section, since it mainly concerned contract arrangements, whereas the purchase was for a much smaller amount. Concerning the invitation of offers and the evaluation, Contracts Section stated that it had not been involved.

Purchase Section however explained that it had contacted 13 companies, two had not replied and two other companies had declined in writing. After evaluating the nine offers, DA/EDP had selected IBM as the concept which offered the highest level of integration.

The Acting Chief, EDP & OA Service commented that what was required was a central system to connect with the IBM mainframe of IAEA and capable of being linked with the IBM mainframes of New York and Geneva as well as integrating data processing and office automation applications from a single user workstation. The least costly offer did not provide this concept and although WANG and IBM had both been rated technically feasible (WANG being the cheapest in dollar price), the IBM offer had been superior. OLIVETTI's offer had not been technically acceptable.

The Committee was further explained by EDP & OA Service that the evaluation had been carefully carried out although it had been rather like comparing apples and pears, since the offers were so varied and there were several factors not shown, e.g. the areas of cables and training, which had not been mentioned by some of the companies. The matter of linking up with the existing WANG terminals had also not been addressed by some of the companies.

It was furthermore pointed out that WANG would have to bring in a systems process man to co-ordinate, which would increase their cost. The systems of WANG and IBM were completely different (WANG had not upgraded its equipment for instance). Based on technical reasons IBM was the best choice.

On its question whether choosing the recommended IBM CPU now would prejudice the choice of personal computers/workstations of which a large number would need to be acquired later, the Committee was assured that this was not the case.

Several companies would be invited as soon as the IBM CPU had been installed - to demonstrate the compatibility of their equipment with the IBM CPU. It was therefore technically possible that personal computers/workstations would be acquired later from another supplier than IBM.

Noting that the offer from WANG was less expensive than the one from IBM and that the WANG offer had been rated the second most acceptable on technical grounds, one member of the Committee expressed the view that the evaluation and cost comparison would have been more realistic if it had also included the more expensive software and the large amount of personal computers/workstations to be acquired in the coming years.

Noting that the evaluation of the bids by DA/EDP had found that IBM was the lowest technically acceptable offer, the Committee agreed to recommend negotiations with IBM for an award of contract up to AS 4,071,044 - equivalent to $325,684 - (i.e. for the first twelve months only) on the understanding that DA/EDP would confirm in writing that it was the lowest technically acceptable bid.

Since it appeared that IBM generally insisted on its own contract containing its own general conditions, the Committee stressed the importance of acceptance by IBM of UNIDO's contract and conditions.

(c) Supplementary information

On 23 November 1988 the Acting Chief, EDP & OA Service provided the supplementary information requested by the Contracts Committee on EDP's recommendation for central office automation equipment and on IBM central concept being the lowest technically acceptable solution offered.

(i) The total cost to UNIDO of any contract related to computer equipment and software has the following components:
(a) the cost of the actual contract;
(b) the cost of staff associated with the computer contract being implemented;
(c) the cost of additional equipment and software required to maintain dual or triple environments.

(ii) IBM

Cost of the offer over a 48-month period: $867,700, including the gateway software.

(iii) WANG

Cost of the offer over a 48-month period: $727,900. From the experience of IAEA, the continuous support of 1 P-3 Systems Programmer and at least 1 GS Staff member would be required to maintain a second environment. Unless provisions were made to unify the mainframe environment with the office automation environment, UNIDO would be faced forever with additional staff costs equivalent to $114,500 yearly (at standard costs of $84,000 for a P3 and $30,500 for a GS). The only way to avoid these additional staff costs was to phase out either IBM or WANG. The current WANG environment has minimal investments in UNIDO developed applications software. As a matter of fact, developments have been made outside EDP (Registry, Consultants, Short Term Payroll, and the Payment Card System which was being converted to the mainframe). By contrast UNIDO had invested well over 200 man years in applications development on the IBM mainframe. It had been pointed out in several studies, including the recent GMO report, that it was completely unrealistic to phase out IBM applications and replace them by a WANG environment.

Therefore, the only option open to UNIDO, to avoid the additional staff costs of $114,500 per year was to phase out the central WANG office automation equipment. Based on the ages of the installed WANG CPUs this equipment could be phased out by mid-1991. By choosing WANG, over the 48-month period under consideration, UNIDO would incur costs of 1.5 man years for a P3 and GS, equivalent to $171,750 excluding inflation, which would be unnecessary after mid 1991 if IBM were chosen. This alone makes WANG more expensive than IBM over the 48-month period and considerably more expensive if the dual environment is perpetuated.

(iv) OLIVETTI

Cost of the offer over a 48-month period: $660,400. The OLIVETTI solution was amongst those that would add a third environment to the two existing ones. Again, drawing on the experience of IAEA with WANG, this meant at least 1 P3 and 1 G5 at a yearly standard cost of $114,500. Over the 48-month period under consideration the introduction of a third computer environment would represent additional costs of $458,000, excluding inflation. The total costs of the OLIVETTI solution clearly exceeded the IBM offer and the IBM solution. Moreover, OLIVETTI did not provide a full central office automation concept and was therefore technically uracceptable.

(d) Meeting of the Contracts Committee on 16 December 1988

The Contracts Committee was requested by the Contracts Section to recommend the approval of the award of the 'Lease Agreement for IBM 9730 for the period of 48 months 1.1.1989 - 31.12.1992' to IBM at the total cost per year of AS 1,666,872 or US$138,906 (exchange rate US$ - AS 12) in appliance of Financial Rule 109.21 b): lowest technically acceptable offer.

The Committee was informed that the negotiations with IBM had been successful and that a contract had been agreed which had been in accordance with UNIDO's rules.

The Committee agreed to recommend approval of the contract with IBM for AS 1,666,872.

It was further mentioned that software would be required in the future and that a Software Agreement would be negotiated at a later date either with IBM or another suitable company.

(e) Approval of the Contracts Committee's recommendations

The recommendations contained in the minutes of the meetings of the Contracts Committee held on 18 and 22 November 1988 were approved by the DDG/ADM on 12 January 1989. The recommendations contained in the minutes of the meeting of 16 December 1988 were approved by the DDG/ADM on 2 March 1989.

6.6. Legal Advice

On 5 December 1988 the Chief, Legal Service and Legal Adviser/ODG commented on: (i) the Stand Alone Term Lease Agreement for IBM Machines; (ii) an Installment Payment Agreement, being a Supplement to the Purchase Agreement for IBM Machines.

Most of the provisions were considered reasonable and acceptable from a legal point of view. Some points however had to be clarified; others needed to be included in the agreement in addition to what had been proposed by IBM; other provisions had to be somewhat amended.

6.7. Final Financial Proposal

On 19 December 1988, Contracts Section, together with the EDP & OA Section, concluded the financial negotiations with IBM.

IBM confirmed that its final financial proposal would include a number of modifications, which would be provided free of charge to UNIDO:

(i) Relocation of IBM 9370 from a temporary to its final location; savings AS 7,000.
(ii) Installation assistant; savings AS 82,000.
(iii) Increase of the number of end-users for training and software, and the customizing and education on-site from 40 to 90 end-users during 1989 (originally quoted for 40 users: AS 231,000); savings AS 200,000.
(iv) Three different PS/2 models with software would be provided to EDP & OA Section, free of charge (14.1 - 30.4.1989); savings AS 24,000.
(v) Software for IBM 9370 would be delivered in December 1988 upon UNIDO's request, but payment of AS 1,666,286 would be due later.

6.8. Re-evaluation of OA central hardware and software

At a meeting of 20 December 1988 WANG offered to give UNIDO the central processing unit free of charge (if awarded the whole contract).

DDG/ADM requested EDP to seriously consider this offer, re-evaluate and make a new recommendation.

In order to properly assess the advantages of the WANG offer, it was decided to conduct a functionality test of the WANG connectivity to the IBM mainframe. On 20-21 December 1988 the functionality tests to be required of WANG were specified. The tests were conducted in January-February 1989.

Results (Interoffice memorandum of EDP & OA Service dated 9 February 1989):

(i) Communications limit

The communications limit between WANG VS's and an IBM mainframe was 64 Kbits/second, whereas IBM computers can communicate with each other at maximum speeds of 16000 Kbits/second. In practical terms this means that going with WANG would limit UNIDO's future concurrent support of workstations accessing the mainframe to a 2-digit number (possibly not more than 50). The IBM-communications limit could concurrently support 1000 or more workstations.

(ii) Response time

During the demonstration (with only one terminal active), response rates when the terminal was used to connect to the IBM mainframe seemed, to all present, disturbingly slow. This was due to two factors:

(a) The line delay which amounted to approx. 1 second per screen;
(b) The SNA emulation (the work required by the WANG hardware/software to pretend to be their IBM counterparts) which exceeded 4 seconds and can be as high as 10 seconds.

Such response delay seriously called into question the applicability of the WANG approach to connect 1,000 or more workstations over the next four to five years.

(iii) Cabling infrastructure

Although not previously considered, recent developments pointed towards a recommendation of installing high-speed token-rings to connect UNIDO workstations with each other and with central computers. A working group of MITC was close to a final recommendation on such cabling infrastructure

for UNIDO. This was a necessity to solve problems of space in the shafts that hold the connecting cables and to prepare for a future network of 1000 workstations. Although WANG VS computers could talk to each other and to IBM computers they could not, according to WANG, talk to their own workstations via token-ring. Therefore, in terms of cabling, the continued expansion of WANG central computers posed an additional complication and cost factor.

(iv) Conclusions and recommendations

EDP & OA Service recognized that at that stage:

(a) some of the features of WANG office software were superior to their IBM counterparts,
(b) there was considerable resistance to change from certain secretarial staff and from staff in Languages and Documentation. This is a natural thing to happen, but it ignores the fact that there will be continuity and that WANG and its functions, especially word processing, will be here (in UNIDO) for many years to come, parallel to, or in use in, IBM products.

Furthermore, because of the long delay in actually implementing the office automation expansion project which should have been installed 'last' June and because the implementation of the transition to the IBM concept could only be done Division by Division, it was necessary to point out that UNIDO would have to acquire and add to WANG central computer capacity immediately. This should be seen as a necessary transitional measure and in no way negated UNIDO's basic commitment to a unified IBM concept.

Because UNIDO was at the crossroads and this would be a unique opportunity to change, the strategy recommended was a seamless environment that would expand up to 1000 workstations, all of which can access UNIDO's data bases, do text processing and other office automation functions such as electronic mail, and can perform local applications. And here EDP did not see WANG providing an environment comparable to that of IBM.

Therefore, for reasons of strategy and taking into account how to best satisfy the future needs of UNIDO, EDP recommended to proceed with the original plan of December 1988 to acquire an IBM central office automation computer, in spite of the apparent additional cost.

6.9. Revised Agreement

On 1 March 1989 IBM submitted a revised "Stand Alone Term Lease Agreement" and the related "Annex B".

Modifications:
(i) The date of installation would be 13 March 1989.
(ii) The commencement date for payment was changed from 1 January to 1 April 1989;
(iii) The purchasing conditions had changed slightly due to a change in the Austrian fiscal law effective 1 January 1989.
(a) After expiration or prolongation of the lease term UNIDO may request from IBM an offer to purchase. The purchase price would be:
(i) the lease charge paid for two months, if the machine would be purchased before the end of the fourth year following the year of installation;
(ii) the lease charge paid for one month, if the machine would be purchased after the end of the fourth year following the year of installation.

(b) UNIDO may at any time request from IBM an offer to purchase. IBM proposed in such a case 'at present' a purchase price amounting to the lease charge for the remaining lease term plus a lease charge for two months, discounted on the basis of the rate of interest in force at the time of the request.

(c) After expiration of the Lease Agreement UNIDO may request from IBM an offer for prolongation of the Lease Agreement. 'Presently' IBM proposed in such a case one half of one monthly lease charge for a prolongation for one year.

6.10. The Stand Alone Term Lease Agreement

The Stand Alone Term Lease Agreement for IBM Machines (with attached Annexes) was finally signed: (i) on 6 March 1989 by UNIDO; (ii) on 10 March 1989 by IBM.

The Supplement to this agreement was signed: (i) on 6 March 1989 by UNIDO; (ii) on 31 March 1989 by IBM. The quarterly lease charge was fixed at AS 390,934 (i.e. AS 130,311 per month or US$10,102 at exchange rate of US$ - AS 12,9).

6.11. Purchase Orders

On 1 March 1989 an internal Purchase Order, No. 12-9-10092, was issued with a view to obligating AS 1,172,799 (US$90,915 at exchange rate of US$ - AS 12,90) to cover the cost for leasing during April - December 1989.

On 22 February 1990 an internal Purchase Order, No. 12-0-10122, was issued with a view to obligating AS 1,303,113 (US$101,016 at exchange rate of US$ - AS 12,90) to cover the leasing cost during January - October 1990.

6.12. Removal of IBM 9370 from the VIC premises

As stated in an interoffice memorandum of DA/EDP & OA Service dated 7 November 1990, IBM fulfilled the transfer of applications from the IBM 9370 to the UNIDO mainframe.

6.13. Our comments

. We feel that the argument adduced against selecting the WANG offer that the WANG environment within UNIDO Headquarters 'currently' had several shortcomings in compatibility between the PC and OA-CPU levels, is not satisfactory in view of the fact that UNIDO explicitly invited WANG to make a proposal. Management recalled, in this connection, that compatibility was only one of the several criteria used in the detailed technical evaluation and that, in fact, in the overall rating WANG was placed as number 2 among the five firms that were fully analysed. In Management's opinion, there was, therefore, no reason to have excluded WANG from submitting a proposal, but it was still necessary and valid, subsequently, to state the shortcomings in compatibility.

. Another argument used against selecting WANG, that UNIDO cannot afford to continue supporting two completely parallel electronic environments (IBM and WANG), also seemed, in our opinion, not quite convincing in view of the fact that UNIDO continued acquiring a lot of WANG machines, partly because of the commitment of UN Headquarters to WANG Systems

and the close connection of the UNIDO Language and Documentation Service to UN New York. Management explained, in this regard, that

(i) the additional and recurring cost of integration of both environments was estimated at one P-3 and one GS staff;
(ii) the continued acquisition of WANG machines is exclusively for the use of the Department of External Relations, Public Information, Language and Documentation Services and these machines are not integrated with the data processing environment of UNIDO.

. Bearing in mind that the acquisition of the central computer and office automation equipment was handled by piecemeal, we, furthermore, found the so-called urgent lease of the IBM 9370 computer questionable in view of the fact that:

(i) the agreement was signed in March 1989;
(ii) in August 1989 Management, when preparing the technical specifications for the mainframe computer facility, knew that by the end of 1990 the IBM 9370 would have to be removed from the VIC premises;
(iii) the circumstance of the "trade-in" of the IBM 9370 computer at the end of 1990 put IBM in a preferential position as against its competitors for the mainframe computer facility (See Chapter 10.);
(iv) compared to these competitors, already the installation and commissioning of its 9370 computer at UNIDO Headquarters in 1989 gave IBM more and better opportunities for preparing its bid for the mainframe computer facility.

In this connection, we concur with the view expressed by the Chief, Internal Audit Unit in his Report No. 6/90 dated 29 May 1990 that the possibility that irregularities take place is a constant risk, but it becomes more of concern when purchases are very large or made in a hurry and whenever established controls and procedures are either weak or can easily be circumvented.

7. Instalment Payment Agreement with IBM for software ...

7.1. Contracts Committee

At its meeting of 6 March 1989 the Contracts Committee was requested to recommend approval of the 'purchase' from IBM of:

(i) Software for IBM 9377/090
Instalment Payments Agreement for a period of 48 months (1.10.1989 - 30.9.1993).
Monthly instalments AS 41,716 (US$3,234 at exchange rate of US$ - AS 12,90).
Total AS 2,002,368 (US$155,222).

(ii) Application Systems for IBM 9377/090
Instalment Payments Agreement for a period of 48 months.
Monthly instalments AS 24,432 (US$1,894).
Total AS 1,172,736 (US$90,910).

(iii) Training end-users on software customizing (90 users)
during 1989-1990. Total AS 231,000 (US$17,907).

(iv) Systems Support. Total AS 51,000 (US$3,953).

Contrary to the statement made at the meeting of the Contracts Committee of 16 December 1988 that the software agreement would be negotiated either with IBM or 'another suitable company', the Committee was now explained that in order to achieve compatibility with the original equipment, the software should be purchased from IBM.

The Committee agreed to recommend approval of the purchase from IBM.

7.2. Purchase Orders

On 7 March 1989 an internal Purchase Order, No. 12-9-10103, was issued with a view to obligating AS 480,444 (US$37,244) to cover: (i) the instalment payments for software and application system in 1989 (1.10.1989 - 31.12.1989); (ii) the one time (total) payment for training and systems support.

On 28 March 1990 an internal Purchase Order, No. 12-0-10122, Amendment A, was issued with a view to liquidating AS 661,480 (US$51,278) covering the instalment payments for software and application system for the period 1.1.1990 - 31.10.1990.

8. Turn-key Contract for the Vertical Wiring and Installation of an IBM Token-Ring Backbone LWL Network in the buildings D & E at the VIC

8.1. Chronology of events

(a) At the HITC meeting on 17 May 1989 it was decided that Buildings Management should prepare a statement of the specifications for cabling work to be contracted out and a list of five companies that would be able to execute the work suitably, for purposes of initiating the bidding process expeditiously.

(b) The work was subdivided into five parts:

(i) Planning and Engineering;
(ii) Installation;
(iii) Cables and Accessories;
(iv) Electrician Services;
(v) Hardware and Software, including Installation.

(c) On 7 September 1989 Contracts Section invited thirteen companies to submit their offers by 22 September 1989. Bids were received from eleven companies. Ten companies submitted only partial offers. Only one offer, namely from IBM was complete (for the five parts).

(d) On 26 September 1989 Electronics Engineering Unit indicated the IBM offer as the only technically acceptable one for the following reasons.

(i) IBM offered all requested parts of the bidding document.
Part No. 1, which is offered only by IBM, is considered technically very important in connection with the realization of the very important UNIDO target of end December 1989.
(ii) The offer of IBM can provide further a guaranty of minimum demarkation problems of different vendors (software, hardware, etc.) during guaranty time and later operation. This is most important since UNIDO could avoid long repairs and trouble-shooting of this very complex and vital network for the EDP/OA operation of UNIDO.

(e) In a Note for the File of 26 September 1989 the Director, General Services Division noted however the following points which he considered not acceptable and as having had an overall negative influence on the result of the bidding process.

(i) The specifications were tailor-made by IBM for an IBM token-ring network.
(ii) UNIDO has not even neutralized the specifications tailor-made by IBM and, in effect (iii) sent out its proposal request using the front page of every one of the five parts of the specifications showing the Austrian State seal and the IBM trademark. UNIDO confined itself to adding its own address thus implying connivance with IBM and giving the other bidders cause for doubting or questioning the fairness of UNIDO's bidding procedure.
He signed the requisition most reluctantly and only in view of the urgency of the work.

(f) In a Note for the File of 29 September 1989 the Acting Chief, DA/EDP 'clarified' the above statement.

(i) The concept of a vertical backbone based on a token-ring network was the result of a recommendation made by a working group of MITC that was discussed and approved by MITC at its fifth meeting on 17 May.

(ii) The concept of a token-ring was chosen due to the need to attach:
(a) an IBM OA mini-computer;
(b) the future mainframe;
(c) a series of IBM compatible workstations, among others WANG, ALCATEL-ITT, OLIVETTI and on a minor scale, IBM.

(g) On request of the Contracts Section, the Contracts Committee at its meeting on 29 September 1989 agreed to recommend the award of contract of AS 11,118,850 to IBM, the only company who according to Buildings Managements Section provided a complete and technically acceptable offer.

(h) The contract was signed:
(i) on 16 November 1989 by UNIDO;
(ii) on 17 November 1989 by IBM.
The delivery and installation of the equipment had to be finalized by 31 December 1989.

8.2. Our comments

With regard to the specifications being tailor-made by IBM for an IBM token-ring network, and not being neutralized by UNIDO, we refer to para. 63 of our Report of 31 May 1988 (IDB.4/3-PBC.4/12) where we observed that Management was in agreement with our recommendation that, in order to preclude any form of monopoly as well as any occasion of fraud, and to obtain optimum competitiveness, the specifications should always be carefully prepared, and Purchase and Contracts Sections and/or the Substantive Office should adduce evidence of the complete neutralization of brand or trade names, the use of which should be restricted to instances where there are no other satisfactory means of designating a required quality or performance. Management had stated that it had taken action in this respect.

9. WANG Equipment

(a) Contracts Committee Meeting on 27 March 1987

Servicing of WANG Word Processing Equipment

Reference was made to an existing contract with WANG, relating to the servicing and maintenance of equipment used by UNIDO and UN units in the VIC. The Committee was requested to approve a continuation of this contract for 1987. It was observed that the costs had been increased to cover additional equipment which had been purchased since the last contract in 1986. The rates had remained the same as for 1986 and the usual discount of six percent had been allowed. The Committee agreed to recommend approval of a renewal of contract to WANG for AS 2,928,611 (equivalent to $228,798, at exchange rate 12.80).

(b) Contracts Committee Meeting on 6 November 1987

Maintenance of WANG Word Processing Equipment.

PAC requested approval of an increase in the contract with WANG to cover maintenance of additional equipment which had been purchased during 1987. It was observed that of the additional cost of $4,967, the amount of $1,658 applied to UNIDO and the remainder to UN units. The Committee agreed to recommend an increase in the contract with WANG amounting to AS 60,599 (equivalent to $4,967, at exchange rate 12.20).

(c) Contracts Committee Meeting on 22 December 1987

Computer equipment. Purchase Section (PUR) had been requested to purchase seven items of hardware and software from WANG for use in various sections of UNIDO. The Committee was told that the purchases had been held up since the funds had not been available. Since other computer equipment within the VIC had been purchased from WANG it was necessary to purchase the present items from the same company in order to maintain 'standardization'. The Committee agreed to recommend purchase from WANG for $132,512.

(d) Contracts Committee Meeting on 19 February 1988

Maintenance of WANG Word Processing Equipment

Approval was requested for an extension of contract with WANG. The Committee was provided with information on the future costs for 1988, compared with the 1987 costs. It was noted that the costs were higher for 1988 owing to the fact that 26 new WANG machines had been purchased. It was understood that UNIDO itself now had a total of 140 machines. It was pointed out that the costs were calculated per machine and that the price had not been increased. Contracts Section (CONTR) confirmed that no other company could carry out the services. It was recollected that originally WANG had been chosen, since it had become standard equipment in UN Headquarters, and a special UN price had been negotiated. Furthermore, there was a possibility of linking the WANG computers in Vienna with those in New York. It had been observed, however, that other brands were also being purchased in UNIDO - possibly under special funds.

It was the opinion of the Committee that the question should be looked into and the Chairman was asked to take up with the Computer Section the issue of using another brand of computer/word processing equipment, not merely from the standpoint of cost, but also in view of the complexities arising out of multiple computer configuration. In the meantime the Committee agreed to recommend approval of an extension of contract with WANG for AS 3,542,837 (equivalent to $302,807, at exchange rate 11.70).

(e) Contracts Committee Meeting on 1 July 1988

Computer Equipment for UNIDO.

Reference was made to earlier purchases of computer equipment from WANG which had been made over the previous years. Approval was requested for the purchase of additional equipment to enlarge the existing computer network. The Committee agreed to recommend approval of the purchase from WANG for AS 31,137 (equivalent to $9,870 at exchange rate 12,70) under Financial Rule 109.19 (c) 'standardization'.

With regard to future requests for WANG equipment, in order to avoid continual requests for approval of small amounts the Committee agreed that when the amount of such purchase reached the level of $40,000 submissions could then be brought to it for approval.

(f) Contracts Committee Meeting on 2 September 1988

Computer equipment.

The Committee was requested to approve the purchase of various items of equipment required to upgrade the existing VS mainstation and to enlarge the PC network. PUR was asked if WANG was continuing to make provisions for training on the items being purchased (referring to the Committee's previous request that arrangements should be made to include credit for training in the purchase order relating to the item purchased). The question of maintenance was also raised - was it included in the price or was it added later, thus increasing the cost of the item? PUR replied that arrangements for maintenance were generally made after the period of warranty had expired. PUR also explained why different discounts were shown on the various requests - 21 per cent was given in respect of hardware and 6 per cent for software and supplies. Concerning the matter of training, there had been some difficulties with WANG who had raised some objections.

EDP explained that there had been some correspondence, also discussions, with WANG, who among other things had stated that UNIDO's allocation for training had been exhausted. (Reference was also made to participation by some EDP staff members in training courses held by WANG.) The company had proposed that the matter of training should be treated separately, as with other UN organizations. One member pointed out that UNIDO was often purchasing items similar to those for which training had been provided previously and which could be used as a basis for in-house training, whereas it would be important to make sure that training would be provided by WANG for new systems being purchased. EDP conceded that such an approach would be advantageous but doubted that it would be acceptable to WANG. As far as maintenance was concerned, the tendency was to wait until the warranty period was at an end before entering into arrangements for maintenance. The Committee commented that it had been of the understanding that the arrangements as agreed were being carried out. It was therefore surprised that it had not been previously informed that the situation was otherwise and UNIDO was continuing to purchase items without provision for training being made. It noted, however, that there had been some exchange of correspondence and discussions with WANG on the subject and requested EDP to provide it with information on the matter, together with a proposal concerning the possible inclusion of training in future purchase orders. In the meantime the Committee agreed to recommend approval of the present purchase from WANG amounting to $50,982.

(g) Contracts Committee Meeting on 16 December 1988

Software Service Contract.

The Committee was asked to approve an award of contract to WANG to cover services in respect of the software being used by UNIDO (namely five office automation WANG machines). This service was seen as necessary to ensure a continued support for all WANG users. In the past WANG had supplied software support and upgrades as part of the hardware maintenance agreement but had wished to charge separately in 1988 - but as UNIDO had not budgeted for this it had continued to provide the services free of charge for that year.

WANG was providing similar services to all its customers and similar systems were being used by all computer companies. CONTR pointed out that UNIDO's software was the property of WANG and could only be used with a licensing agreement. It further confirmed that the price was very reasonable and that it was necessary to have such a contract. The Committee agreed to recommend approval of an award of contract with WANG for AS 495,116 (equivalent to $41,260).

(h) Contracts Committee Meeting on 24 February 1989

Maintenance of WANG Word Processing Equipment.

Approval was requested for the extension of the above contract with WANG for the year 1989. The Committee agreed to recommend approval of the extension of the contract with WANG for AS 3,929,438 (equivalent to $304,608 at exchange rate 12,90). It requested, however, that bidding should be undertaken for 1990, commenting that although it was doubtless necessary for WANG to maintain the control CPU Word Processing Unit, there might be other companies in Vienna which were able to maintain the peripheral equipment contract at much more competitive prices. Also, thought could be given to purchasing a limited number of additional machines, which could be used as replacements during breakdowns. The maintenance funds thus saved could be kept for the purchase of new 'later-generation' equipment, as items of equipment were being replaced in the computer field, not because they were old and broken down but because they were obsolete.

(i) Contracts Committee Meeting on 6 March 1989

At its meeting on 2 September 1988 the Committee, when approving an award of purchase to WANG, had agreed that in the case of small purchases approval need only be sought when the accumulated total reached $40,000. PUR regretted that owing to pressure of work at the end of the year the matter had not been brought to the Committee earlier. Up to the present time the purchases totalled $65,245. A breakdown was attached giving the names of the various sections involved and the amount of the equipment which had been purchased.

Approval was also requested for an additional number of items for the amount of $65,502, for which background information was also supplied. The Committee agreed to recommend approval of the present purchase of the equipment from WANG (including the previous purchases) amounting to

$132,747. However, before passing this recommendation to DDG/ADM it requested that the Secretary obtain confirmation that the present request had been cleared by the Computer Advisory Committee. It also drew attention to the necessity for clearing all future purchases with that Committee (by signature of the Chairman).

(j) Contracts Committee Meeting on 19 May 1989

Servicing of additional WANG Word Processing Equipment.

Approval was requested for an increase in the existing service contract with WANG to cover the additional word processing equipment which had been purchased for UNIDO and the UN units. CONTR confirmed that bidding would be undertaken at the end of 1989 as agreed at a previous meeting. The Committee agreed to recommend approval of an increase in the contract with WANG for AS 395,597 (equivalent to $30,198 at exchange rate 13.10).

(k) Contracts Committee Meeting on 26 May 1989

Computer Equipment in UNIDO.

PUR listed purchases made since March 1989 totalling $27,049. Reference was also made to a request to purchase 12 WANG Printers amounting to $46,100 (less $6,055 for 12 existing printers under the trade-in programme offered by WANG). PUR was asked if this trade-in was a good deal so far as the price was concerned. It replied that the machines were old from the technical point of view and that the offer from WANG was a good one. The Committee agreed to recommend purchase of the equipment from WANG for a total amounting to $67,094.

(l) Contracts Committee Meeting on 7 July 1989

Computer Equipment.

PUR requested approval of the purchase of additional software from WANG (covering three items) to add to the existing equipment. At the same time reference was made to two small purchases, totalling together $1,501 which had been made since May 1989. The Committee agreed to recommend approval of the above equipment from WANG amounting to $59,001 in all, under Financial Rule 109.19 (c) 'standardization'.

(m) Contracts Committee Meeting on 21 July 1989

Computer Equipment.

Approval was requested for the purchase of hardware and software to upgrade the existing main OIS and VS units supplied by WANG. The Committee agreed to recommend an increase in the purchase order with WANG of $190,858 under Financial Rule 109.19 (c) 'standardization'.

(n) Contracts Committee Meeting on 6 October 1989

Servicing of WANG Word Processing Equipment.

The Committee was requested to approve an amendment to the contract for the servicing of WANG word processing equipment used by UNIDO and the UN units. It was pointed out that UNOV had bought additional WANG equipment in 1989 and the amendment was to cover the servicing of the additional equipment.

The Committee took note of the fact that bidding procedures had been undertaken to cover Maintenance of Computer Equipment used by UNIDO and the UN units in 1990. They were informed that offers had been received and were being evaluated by the substantive office. The Committee agreed to recommend the amendment to the contract of AS 130,000 ($9,774) for the servicing of word processing equipment by WANG under Financial Rule 109.19 (c) 'standardization of supplies and equipment'.

(o) Contracts Committee Meeting on 10 November 1989

Lease of WANG Equipment

The Committee was informed that a request had been made by EDP&OA Service to enter into a leasing agreement to acquire WANG workstations, desktop publishing workstations, and printers to be used in the Department of External Relations, Public Information and Language and Documentation Services. It was pointed out that the restriction to WANG was because of the commitment of UN Headquarters to WANG systems and the close connection of the UNIDO Language and Documentation Service to UN New York. Because it was not foreseen that any move away from WANG systems would be made in the immediate future the leasing of additional workstations was being requested. The Committee agreed to recommend the award of contract to WANG to the amount of AS 3,767,691 (US$292,069) under Financial Rule 109.19 (c) 'standardization of equipment'.

The Lease Agreement was signed on 9 April 1990 by UNIDO. Terms of lease: 48 months commencing 1.3.1990 and ending 28.02.1994.

On 19 December 1989 an internal Purchase Order was issued with a view to obligating AS 912,672 (equivalent to $72,434 at exchange rate 12.60) to cover leasing costs for 1990.

(p) Contracts Committee Meeting on 2 February 1990

Maintenance and Repair of WANG Master CPUs.

Approval was requested for the award of a contract to WANG for the maintenance and repair of the WANG Master CPUs used in UNIDO and UNOV. The Committee was informed that, while competitive bidding had taken place for the maintenance and repair of PCs and computers (both WANG and other makes; see para. 14.), the maintenance and repair of WANG Master CPUs should, for technical reasons, be carried out by WANG itself. The Committee agreed to recommend the award of a contract to WANG for such service during the year 1990 at a total cost of US$114,146 (UNIDO $79,084 and UNOV $35,062) under Financial Rule 109.19 (e) 'proprietary articles'.

10. Agreement for System Integration: mainframe computer facility

10.1 The mainframe selection process started on 12 July 1989 when telexes were sent to twelve firms worldwide informing them of UNIDO's intention and asking them to indicate their interest.

Three companies indicated their interest:
(i) IBM, Austria;
(ii) National Advanced Systems (NAS), Austria; and
(iii) Amdahl, FRG.

10.2 Technical Specifications

The technical specifications were prepared on 31 August 1989.

(a) In the preamble it was stated that based on the decision of the Director-General and the Industrial Development Board (IDB), UNIDO intended to establish its own mainframe computer facility by mid-1990. UNIDO therefore intended to acquire the hardware and software and such services as are necessary to establish this facility.

It was further explicitly stated that the operation and system support would be subcontracted to a facilities management firm by separate bid.

(b) General scope of requirements in non-technical terms:

(i) A mainframe computer that must provide sufficient features and capacity to run the new relational data base and productivity tools, and to flexibly serve a user community that will be experiencing very rapid growth, both in terms of connected devices and required applications over the next four years.

(ii) At the same time, it must be able to run, without any changed or degraded performance, all applications software and compilers currently used by UNIDO on the IBM 3081K+ computer operated by IAEA. UNIDO 'currently' used approximately one third of the capacity of this computer and expects to grow at the rate of 60 per cent per year from mid-1989 through 1991, and at least 45 per cent per year thereafter. The new mainframe should be configured to meet these growth rates through the end of 1994.

(iii) Furthermore UNIDO operated an IBM 9370 computer on which IBM's office system software "PROFS" was run under VM to support some 100-120 personal computer based workstations for office network functions such as electronic mail and document exchange.

(iv) UNIDO wished to transfer PROFS to a portion of the mainframe computer to be acquired and to expand support for office functions to a user community that would grow from around 500 intelligent workstations in 1990 by 150 to 160 per year to approximately 1,100 workstations.

(c) The successful bidder must therefore provide UNIDO with:

(i) A mainframe computer fully compatible with the latest IBM operating systems, MVS/ESA and VM/XA-SP, and including micro-code support to allow multiple logical partitioning of the machine to be able to run both as multiple preferred guests.

(ii) The operating system MVS/ESA, plus all software tools UNIDO currently used on the IAEA IBM 3081K+ mainframe. For certain (listed) software replacement products would be acceptable if it could be shown that it was both to UNIDO's advantage that they be substituted and that their substitution was part of the services being offered under the terms of the bid and could be implemented without critically delaying the implementation plan for the mainframe installation.

(iii) The operating system VM/XA-SP, plus all software tools UNIDO currently used on the UNIDO IBM 9370 computer.

(iv) Such additional software tools as specified.

(v) Mass storage devices (direct access storage devices and tape drives and cartridges) to meet the requirements for space, speed of access, and distribution as detailed.

(vi) Communications hardware and software to permit UNIDO to connect the new mainframe with UNIDO's terminals, networks, and communications devices (as detailed), as well as to the public packet switched network, the IAEA mainframe, and such other devices as detailed.

(d) Furthermore, as part of its offer the successful bidder must include all such services as are required:

(i) To set up, test, and bring to full production mode the computer, partitioned to run the MVS/ESA and VM/XA-SP (incl. PROFS) operating systems as multiple preferred guest systems, and all other software that constitutes a part of these technical specifications, whether licensed from this vendor or not (according to schedule, by end March 1990).

(ii) To assume, test, and in coordination with UNIDO analysts and programming staff, bring to full production status all UNIDO applications running on the IAEA mainframe at the cutoff date (to be agreed upon - estimated between March and May 1990).

(iii) To assume, test, and in coordination with UNIDO Office Automation staff, bring to full production status the complete UNIDO office environment running on the IBM 9370 computer at a cutoff date to be agreed upon (estimated to be the end of 1990). Furthermore to connect this environment to UNIDO's WANG VS network.

(iv) To transfer all UNIDO applications software, data, and such tables that are required to transfer UNIDO applications from the IAEA to the UNIDO computer in full production status.

(v) To educate, train, and, as required, otherwise familiarize the operations and systems staff who will be charged with the management of the new UNIDO computer facility. UNIDO intended, by separate bid, to subcontract the management and operation of this facility.

(e) Hardware requirements, inter alia:

(i) The mainframe should have at least two times the internal throughput rate (running MVS/ESA in native mode) of the current IAEA IBM 3081K+ system (running MVS/XA) and must be field upgradable to three times that rate.

(ii) Software Compatibility

The mainframe must be capable of running all software described (The list of required software contained mandatory software items, which must be supplied; i.e. no replacements acceptable. They were indicated with IBM Product numbers). Specifically, the mainframe must be capable of running the IBM operating systems MVS/ESA and VM/XA-SP independently and concurrently.

(iii) The UNIDO 3745 Communications Controller

UNIDO was currently in the process of acquiring an IBM 3745 Communications Controller as part of its overall premises cabling concept. It intended to connect the majority of its personal computer

workstations to the new UNIDO computer through this 3745 via a network of Token-Rings connected to the 3745 via, initially three and eventually up to five high-speed backbone Token-Rings. The 3745 communications controller would also be equipped with several 64KB lines for communications to outside computers such as the IAEA 3081K+ mainframe and the UNIDO WANG VS computer network. The request for proposal required primarily that the supplier state clearly that its proposed computer could indeed connect to the UNIDO IBM 3745 controller and be able to service all communications described.

(iv) Local Terminal Controller:

UNIDO expected, by the switchover date to have at least 400 terminals connected to the IAEA IBM 3081K+ computer, 100 of which are connected via Alcatel (ITT) 9440 local terminal controllers, and the rest connected via IBM 3174/01L and 3274/A41 local terminal controllers. These local terminal controllers would be taken over and needed to be connected to a channel dedicated to the primary MVS/ESA partition of the new UNIDO computer. UNIDO requested that the proposal include the possibility of an additional IBM 3174 or compatible local terminal controller for the console(s) of the MVS/ESA partitions(s).

(f) "Trade-in" of UNIDO's existing 9370 VM computer

(i) The supplier should agree to take over the lease obligations for UNIDO's IBM 9370 computer and to arrange for the removal of same by 31 December 1990.

(ii) Furthermore the supplier should arrange, at no cost or obligation to UNIDO to "trade in" the IBM Software products currently installed on the UNIDO IBM 9370 computer for functionally equivalent IBM VM software to run on the new mainframe. Should no credit be granted for 9370 software, or should this credit be less than 80 per cent of the Initial License price paid by UNIDO, or less than 60 per cent of the current market value of this software, whichever of the latter two is the greater amount, the supplier must agree to idemnify UNIDO up to this amount by granting a credit against the total lease value of the mainframe to be leased by UNIDO.

(g) Terms of Acquisition

(i) UNIDO wished to acquire the mainframe and all associated hardware components via leasing.

(ii) UNIDO wished to acquire the software through monthly licence installments/payment of an initial license fee.

UNIDO insisted that for all software for which it currently possessed a license on the IBM 9370 computer the price paid for these licenses be credited to the cost of licenses for equivalent products on the new computer, whether, as was the case for "AS", the new version was to be installed in the MVS/ESA environment, or whether they constitute a part of the new VM/AX-SP environment which functionally would replace the IBM 9370 computer.

(h) Itemized Prices

Prices should be stated for each individual item of hardware, software and services.

10.3 International bidding

(a) On 6 September 1989 the requests for proposal were sent to thirteen companies.

(b) In their proposal the bidders had to mention:

(i) The leasing rates for forty-eight, fifty-four and sixty months leasing agreement for the mainframe and all associated hardware components;
(ii) Monthly licence installments/costs for same periods of an initial fee(s) for all required software;
(iii) A firm fixed price(s), if any, to complete all services required;
(iv) All offers must be firm and valid for a minimum of ninety days.

(c) The closing date for submitting the proposals was 5 October 1989.

(d) Three formal bids were received. According to calculations made by EDP & OA Service the three offers would amount to:

(i) IBM, Austria	AS 138,446,341
(ii) AMDAHL, FRG	AS 139,050,941
(iii) NAS, Austria	AS 139,083,344

covering the total leasing cost for a fifty-four month period including hardware, software, licence agreement, installation, services, maintenance and purchasing of some necessary non-IBM software.

(e) Detailed calculations

(i) IBM

(a) For the basic project:

Downpayment (due on 1 July 1990):		AS 5,125,000
hardware:	AS 3,437,127	
software MVS/ESA:	AS 529,970	
software VM/XA:	AS 1,157,903	
Full Payout Leasing - 54 months contract - leasing window of 6 months - payments starting on 1 July 1990		
48 x AS 1,558,598:		AS 74,812,704
Software monthly license charges MVS/ESA, starting 1 September 1990		
46 x AS 636,131		AS 29,262,026
VM/XA, starting 1 November 1990		
44 x AS 114,400:		AS 5,033,600
Maintenance Services		
54 months starting 1 January 1991		AS 9,532,250
Subtotal for basic project		AS 123,765,580
(b) For comparison reasons added by the EDP & OA Services:		
Leases additional equipment		AS 416,090
Existing software licenses		AS 2,740,877
Existing license fees		AS 11,156,114
Maintenance additional equipment		AS 367,680
Subtotal		AS 14,680,761
Total (a) + (b)		AS 138,446,341

(ii) AMDAHL

(a) For the basic project

Downpayment (third party channel extender)	AS	273,000
Lease hardware (54 months): 54 x AS 1,080,233	AS	58,332,582
Additional equipment to be delivered by Comdisco	AS	5,270,661
Software License Fees		
MVS/ESA 54 months x 636,131 (= IBM)	AS	34,351,074
VM/XA 48 months x 114,400 (= IBM)	AS	5,491,200
Maintenance Services		
downpayment	AS	10,644,480
installment payments	AS	9,103,080
Subtotal basic project	AS	123,466,077

(b) For comparison reasons added by EDP & OA Service:

Downpayment Existing Software Licenses	AS	4,428,750
License Fees	AS	11,156,114
Subtotal	AS	15,584,864
Total (a) + (b)	AS	139,050,941

(iii) NAS

(a) For the basic project

Lease hardware 54 months x AS 1,317,360:	AS	71,137,440
Software License Fees		
MVS/ESA 54 x AS 636,131 (= IBM)	AS	34,351,074
VM/XA 48 x AS 114,400 (= IBM)	AS	5,491,200
Maintenance Services		
42 months x AS 241,650	AS	10,149,300
Subtotal basic project	AS	121,129,014

(b) For comparison reasons added by EDP & OA Service:

Lease additional equipment	AS	1,404,305
Maintenance additional equipment	AS	965,160
Downpayment Existing Software Licenses:	AS	4,428,750
Existing License Fees	AS	11,156,114
Subtotal (b)	AS	17,954,329
Total (a) + (b)	AS	139,083,343

(f) All bids were submitted to EDP & OA Services for their evaluation.

10.4. Evaluation of the bids

Interoffice memorandum of 24 October 1989 with the detailed technical evaluation:

(a) The only company which satisfied the minimum requirements to the largest degree was IBM.

(b) General Aspects, Functionality, Services and other Requirements

(i) AMDAHL did not provide sufficient data to determine their bottom-line costs. They omitted a total services estimate, left out certain hardware, offered a confusing array of software and did not comment clearly on communications requirements. The poor quality of their proposal required EDP & OA to construct their cost matrix. This company had only spoken to UNIDO EDP & OA once during all this time although given ample opportunity for discussions. They did not provide enough information to assure UNIDO that they grasped the scope of the situation leading EDP & OA to doubt that they would handle the total "turnkey" project successfully.

(ii) NAS did not provide sufficient information to demonstrate that they understood the UNIDO situation. They omitted any reference to the IBM 9370 hardware trade-in matter (AS 3,909,330 value to UNIDO) - which was a mandatory requirement - and did not provide software prices thus making it difficult to determine their bottom-line. However they were responsive on virtually all the hardware functionality items. This vendor only had limited contact with UNIDO during this proposal process since last July. It is believed that they are not prepared to handle the tasks to establish the center on-time and properly.

(iii) IBM provided a sufficient, well-prepared response to demonstrate that they understood the UNIDO project very well. However their stated price depended on UNIDO accelerating its implementation schedule; a very difficult task. This was further complicated by the fact that their proposal also contained certain points requiring possibly extensive negotiations. Their costs were not itemized but the proposal presented no serious problem in allowing proper analysis and comparisons. IBM was continuously interested in the proposal and process. The quality of their response showed this.

(c) Initial Costs: Basic Proposal

(i) NAS did not stipulate for an overall one-time charge.

(ii) AMDAHL had an overall one-time charge of AS 10,917,480.

(iii) IBM had an overall one-time charge of AS 5,125,000, which in all fairness must be offset against the fact that IBM does not charge for the first six months of leasing, and for six months' license fees for the MVS software and ten months for the VM software.

(d) Initial Costs: Software Licenses

(i) AMDAHL and NAS did not provide usable information. Consequently, IBM's quoted prices were used resulting in an amount of AS 4,428,750.

(ii) IBM's proposal of AS 2,740,877 was lower since their basic proposal contained initial software license costs.

(e) Ongoing Costs: Leases

(i) AMDAHL charged from the first month.
Biennium 1990-1991: AS 28,268,108;
Biennium 1992-1993: AS 28,268,108;
1994: AS 7,067,027.

(ii) NAS also charged from the first month.
Biennium 1990-1991: AS 32,240,776;
Biennium 1992-1993: AS 32,240,776;
1994: AS 8,060,194.

(iii) IBM was explicit in not charging for the first six months.
Biennium 1990-1991: AS 28,210,798;
Biennium 1992-1993: AS 37,614,397;
1994: AS 9,403,599.

(f) Ongoing Costs: License Fees
Was basically the same for all vendors.

(i) For AMDAHL and NAS:
AS 22,254,867 was taken into account for the biennium 1990-1991,
AS 22,941,453 for 1992-1993, and
AS 5,802,068 for 1994.

(ii) For IBM an amount of
only AS 16,798,219 was taken into account for 1990-1991;
also AS 22,941,453 for 1992-1993, and
AS 5,802,068 for 1994.

(g) Ongoing Costs: Maintenance Services
For all three companies the first twelve months were free.

(i) AMDAHL
AS 2,600,880 for 1990-1991;
AS 5,201,760 for 1992-1993;
AS 1,300,440 for 1994.

(ii) NAS
AS 3,175,560 for 1990-1991;
AS 6,351,120 for 1992-1993;
AS 1,587,780 for 1994.

(iii) IBM
AS 2,861,380 for 1990-1991;
AS 5,630,840 for 1992-1993;
AS 1,407,710 for 1994.

(h) Supplementary Costs

The total cost for NAS of AS 139,083,344 did not include the AS 3,909,330 cost for retaining the IBM 9370 through the end of UNIDO's lease period.

(i) Evaluation Conclusions and Recommendations

- UNIDO received only technically acceptable offer: IBM.
- In addition to the fact that the other two proposals were clearly lacking in many aspects, the costs, as far as they could be identified, of these other two proposals exceeded the cost of the technically acceptable one.
- The Contracts Section should present these conclusions to the Contracts Committee at the earliest possible date, in order that, following clarification of outstanding points, a contract could be signed, and
- UNIDO could, together with the vendor, implement the UNIDO Data Center in time to meet the deadlines approved by the DDG/ADM.

Although, according to the Request for Proposals, all offers had to be firm and valid for a minimum of ninety days, i.e. up to and including 4 January 1990, the EDP & OA Service noted in its Interoffice Memorandum of 24 October 1989 that the IBM offer was contingent on a decision being made and a contract signed by mid-November 1989. The EDP & OA Service felt that, although this was a difficult task and, of course, the UNIDO original target dates were later, it was in the best interest of UNIDO to try to meet the IBM dates if at all possible.

10.5. Contracts Committee

(a) Submission

In the submission dated 25 October 1989, the Contracts Section/GS/DA, in agreement with the EDP & OA, requested the Contracts Committee to recommend to the DDG/ADM to negotiate all technical and contractual details with IBM and award the contract to this company at the total cost not exceeding AS 110,797,764 (equivalent to US $8,330,659). The Contracts Section promised to inform the Contracts Committee on the results of these negotiations before signing the contract. The difference between the total price of AS 138,446,341 and that of the contract submission of AS 110,797,764, derives from the fact that the maintenance and purchase of non-IBM software was not included in this submission.

(b) Meeting on 30 October 1989

Members of the Committee questioned the fact that only three offers had been received and that the offer from IBM, Austria was contingent upon the computer being installed in 1989 which might imply that UNIDO was being offered out of date equipment. In replying, the Contracts Section informed the Committee that they had made an exhaustive search and believed that they had contacted all companies worldwide capable of meeting UNIDO's requirements. The Acting Chief, EDP & OA Service commented that IBM Austria had agreed to install their latest model which had been announced on 25 October 1989 and that the leasing agreement would allow for the upgrading of the equipment in two or three years. The Buildings Management Section stated that they had no reason to believe that the site would not be ready to accept the computer on time although the schedule was tight with no allowance for delay.

Concern was further expressed that UNIDO had given notice and accepted a deadline of July 1990 for leaving IAEA computer facilities before having an operational plan.

It was pointed out that July 1990 had been seen as a mutually acceptable date for the changeover as this was the date it had been forecast that the IAEA facilities would reach saturation with no further possibility for upgrading.
UNIDO's transfer would provide the IAEA with an additional one-third capacity.
Had UNIDO opted to continue as a user of the IAEA facilities UNIDO would have been called upon to make a considerable financial contribution to enable the IAEA to obtain hardware to meet the additional capacity needed by both Organizations.

The Committee agreed to recommend that the Contracts Section enter into negotiations on technical and contractual details with IBM Austria and that the contract not to exceed AS 110,797,764 be awarded to IBM Austria under Financial Rule 109.19 (b) 'lowest technically acceptable bid'.

10.6 Negotiations

(a) Already on 2 November 1989 IBM Austria, referring to a conversation held with Contracts Section on 1 November 1989 (i.e. only two days after the Contracts Committee meeting) concerning the IBM proposal for the acquisition of a mainframe, confirmed that:

(i) An advanced payment of the amount of AS 5,125,000 by 31 December 1989 instead of 1 July 1990 originally scheduled, would reduce this amount to AS 4,942,000.

(ii) As an alternative to the 48 monthly lease payments of AS 1,558,598 amounting to a total of AS 74,812,704 as per IBM proposal, IBM proposed:
(a) AS 19,409,700 downpayment due 31 December 1989;
(b) 23 x AS 365,549 (= AS 8,407,627) monthly payments starting 1 February 1990;
(c) 30 x AS 1,488,077 (= AS 44,642,310) monthly payments starting 1 January 1992, resulting in a new total amount of AS 72,459,637.

(iii) On 24 October 1989 IBM worldwide did announce the IBM Enterprise System/3090 (IBM ES/3090) J-Series as a successor to the IBM ES/3090 S-Series. The IBM ES/3090 J-Series reflected the latest improvements of large mainframe technology and offered extensions to the IBM Enterprise Systems Architecture/370 (IBM ESA/370) and an internal throughput of about 10 to 14 percent. IBM would deliver this IBM ES/3090 Model 250J instead of the proposed IBM ES/3090 Model 250S, for the same single fixed price as per their proposal.

(iv) The delivery date for the proposed hardware was 28 December 1989.

(b) Letter of Intent

On 6 November 1989 the DDG/ADM informed IBM Austria that (i) UNIDO intended to acquire a mainframe computer as described in the IBM proposal of 5 October 1989 and its letter of 2 November 1989;
(ii) UNIDO further intended to have this computer installed before the end of December 1989;
(iii) to this effect, contract negotiations would begin immediately.

(c) On 14 November 1989 mutual agreement was achieved.

(d) The Agreement for SYSTEM INTEGRATION was signed on 7 December 1989. Some substantial clauses:

(i) Termination of the Agreement: only in case of (a) non-compliance with the Agreement, and (b) test failure.

(ii) Payment schedule:

(a) Downpayment, due on 31 December 1989:	AS	4,942,000
(b) Downpayment, due on 31 December 1989:	AS	19,409,700
(c) 23 monthly payments of AS 365,549 starting on 1 January 1990:	AS	8,407,627
(d) 30 monthly payments of AS 1,488,077 starting on 1 January 1992:	AS	44,642,310
(e) MVS/ESA Software: 46 monthly payments of AS 636,131, starting 1 September 1990:	AS	29,262,026
(f) VM/XA Software: 44 monthly payments of AS 114,400, starting 1 November 1990:	AS	5,033,600
Total	AS	111,697,263

On 7 December 1989 an internal Purchase Order No. 12-9-10267 was issued with a view to obligating AS 24,351,700 covering the downpayments due by 31 December 1989.

On 22 February 1990 an internal Purchase Order No. 12-0-10119 was issued with a view to obligating AS 6,794,363 covering the monthly lease payments for hardware and software during 1990.

(e) The payment schedules mentioned above were intended to end on 30 June 1994.

(f) Doc. IDB.7/31 of 5 October 1990 - Report on the development of the electronic data-processing programme of UNIDO.

As stated in para. 19, discussions continued with the representatives of IBM. The vendor offered a 'leasing-cum-instalment' agreement contract option to replace the leasing agreement.

Main features of the new offer:

(i) The monthly lease payments of AS 1,488,077 for the period 1 January 1992 to 30 June 1994 (totalling up to AS 44,642,310) would be replaced by:

(a) monthly lease payments of AS 950,000 from 1 January 1992 to 31 December 1993 (totalling up to AS 22,800,000);

(b) monthly instalment payments of AS 893,000 from 1 January 1994 to 31 December 1996 (totalling up to AS 32,148,000).

(ii) The ownership of the mainframe would pass to UNIDO as of 1 January 1994.

(iii) For the biennium 1992-1993 when the cash-flow problem is expected to continue to be difficult, UNIDO would benefit from a reduction in payments of AS 12,913,848.

(iv) Under the leasing contract UNIDO had to pay cumulatively AS 80,085,327 including an amount of AS 2,683,690 ,i.e. two additional normalized (average) monthly leasing payments of AS 1,341,845, for the buyout of the computer by June 1994. The amount of AS 2,683,690 had been confirmed by IBM with letter of 2 November 1990.

(vi) However, under the new option proposed by IBM, UNIDO would have to cumulatively pay some AS 87,707,000 - or an additional AS 7,620,000 - but by the end of 1996.

(f) Amendment to the agreement/contract with IBM?

** At the time of our audit in December 1990, Management couldn't provide us with an amendment signed by both parties and laying down the new contractual conditions and payments schedule. **

10.7 Legal Advice

On 6 December 1989 the agreement/contract with IBM for the 'Establishment of a UNIDO Mainframe Computer Facility' was reviewed and commented upon by the Chief, Legal Service and Legal Adviser/ODG.

Most of the provisions were considered reasonable and acceptable from a legal point of view. Some

points however had to be clarified; others needed to be included in the agreement in addition to what had been proposed by IBM; other provisions had to be somewhat amended.

In the agreement/contract signed on 7 December 1989 the amendments proposed by the Legal Adviser were properly taken into account.

10.8. Price Modifications

On 27 March 1990 UNIDO was informed by IBM that considerable cost increases of nearly all cost factors entailed price modifications per 1 April 1990. Monthly license charges for some programs and maintenance charges for some products were raised by 6 per cent. For certain machines the purchase prices had to be increased by 3.5 per cent.

The changes for purchase and license charges for installed and on-order products would not become effective before the completion of the three months notification period. On 14 September 1990 IBM informed UNIDO that with the price increase dated 1 April 1990 also the monthly license charges for specified programs would change. According to the License Agreement for IBM Programs the increase would become effective 1 January 1991.

10.9. Our Comments

. That the IBM bid was the lowest one offered, is questionable. As regards the license fees for MVS/EAS software, EDP & OA Service for comparison reasons:

(i) With respect to IBM, calculated only 46 monthly payments of AS 636,131, totalling up to AS 29,262,026; and

(ii) With respect to NAS and AMDAHL, took into account 54 monthly payments of AS 636,131 - i.e. the IBM price - totalling up to AS 34,351,074. As explained by Management, the reason for this was that only IBM as part of its offer of a mainframe computer included a reduction to 46 monthly payments in respect of a lease for 54 months. NAS and AMDAHL did not offer the software required, but referred to the necessity of UNIDO acquiring this software directly from IBM. UNIDO's Secretariat took contact with IBM and obtained the price conditions for acquiring the software without the mainframe.

On our question why no negotiations were entered into with NAS and AMDAHL with a view to having their 54 monthly payments brought down, Management explained that:

(i) It is unlikely IBM would have offered the same reduction in case UNIDO did not acquire the mainframe from IBM;
(ii) The technical evaluation of all proposals resulted in the exclusion of NAS and AMDAHL on technical grounds;
(iii) For these reasons it would have been pointless for the Secretariat to engage in negotiations with the excluded companies concerning better commercial conditions.

. In connection with the 'omission' by NAS of any reference to the IBM 9370 hardware trade-in matter - i.e. one of the main reasons for rejecting the NAS bid, we reviewed the NAS proposal available at UNIDO. In the table of contents mention was made of a paragraph on the trade-in issue. The page which should contain the paragraph itself is missing. In view of the fact that at the opening of the proposals no immediate record - containing, inter alia, evidence of the completeness of the proposals - had been made, we could not ascertain whether the paragraph in question was missing from the beginning. Management explained in this regard that:

(i) There was no evidence that an additional page should have been missing in the NAS proposal;

(ii) While the table of contents referred to a paragraph "2.10 Trade-in 9370 VM Computer" in fact the proposal under paragraph 2.10 referred to spare parts while there was no paragraph referring to trade-in;

(iii) As the pages in the proposal were not numbered there was no reason to assume that anything had been omitted by the company;

(iv) This was subsequently informally confirmed by the company during the technical and commercial evaluation;

(v) Moreover, as stated in the evaluation, the proposal from NAS of a mainframe facility was clearly more expensive than the proposal from IBM, even when disregarding the additional cost that would have to be borne by UNIDO for the continuing lease of the IBM 9370; if the lease costs of IBM 9370 were added the NAS proposal would be even more expensive.

. In its final version of 7 December 1989, the agreement with IBM contained totally different contractual conditions and payment schedules as against the original proposals. Instead of a downpayment of AS 5,125,000 due on 1 July 1990, UNIDO finally agreed to make:

(i) an advanced payment of AS 4,942,000 by 31 December 1989; and (ii) a downpayment of AS 19,409,700 also by 31 December 1989. With a view to having full and proper compliance with the rules and principles on competitive bidding as well as on calling for competitive proposals, we asked why before awarding a contract such favourable payment conditions had not also been proposed to NAS and (or) AMDAHL. Management explained, in this respect, that:

(i) when it became possible for UNIDO to advance payments, namely in the first half of November 1989, the technical evaluation of the proposals received had been completed;

(ii) in the technical evaluation NAS and AMDAHL had been found not to be fully technically acceptable in view of serious doubts about their capability to deliver a turnkey project, i.e. the setting up of the operating environment and the management of the migration of the applications from the IAEA mainframe;

(iii) therefore there was no reason to re-open negotiations with NAS and AMDAHL concerning more favourable commercial conditions.

11. IBM System Service Agreement for UNIDO Mainframe Computer and Peripheral Equipment

11.1. Contracts Committee

(a) Submission dated 7 August 1990

Reference was made to the leasing contract UNIDO concluded with IBM for a period of 54 months

starting 1 January 1990 to cover hardware and software for the establishment of UNIDO's own mainframe computer facilities.

Following the successful installation of the system, the Contracts Section was requested by EDP Section to conclude a System Service Agreement to cover preventive maintenance and repair of the mainframe computer and peripheral equipment.

As indicated in a memorandum from DA/EDP, also dated 7 August 1990, IBM is the only company which can provide the requested services.

The starting date of this Agreement is 1 April 1990 and it should last for the whole period of the Leasing Agreement, i.e. 51 months.

The earliest possible termination would be 31 March 1991 (involving termination charges - 8.5 per cent of yearly service charge in case of termination in the first or last year, and 12.5 per cent during the other years).

The service charges vary with the number/ configuration of machines to be serviced.

Fixed service charges were set for:

1 April 1990 to 31 December 1990:	AS 644,157
1 January to 31 December 1991:	AS 2,418,477.

The service charges for the next charging period will be set by IBM one month before the start of the charging period.

The submission to the Contracts Committee was delayed because of (i) the late response of IBM, sending UNIDO their first draft mid March, (ii) the lengthy and complicated negotiations with IBM, and (iii) various changes on the draft contract proposed by the Legal Service and EDP.

The Contracts Committee was requested to recommend to DDG/ADM the award of the subject contract to IBM, Austria for the period of 51 months, at the fixed total cost for the period of 1 April 1990 to 31 December 1991 of AS 3,062,634 under application of UNIDO Financial Rule 109.19 (e) 'Proprietary Articles'.

The Contracts Section will inform the Contracts Committee of the new Service Charges to be established by IBM for the charging period starting 1 January 1992, as soon as possible.

(b) Meeting on 10 August 1990

At this meeting the Committee was of the opinion that the arrangement submitted was not acceptable.

A member of the Committee requested assurance that funds were available. The Contracts Section confirmed that, as for all its submissions, the case is only presented when an approved and certified requisition is on hand.

It was pointed out that, in accordance with UNIDO's budgetary procedure, the budget is approved on a biennial basis, i.e. for 1990-1991. It would therefore be impossible to enter into a contract for a period exceeding the end of 1991, as was being proposed.

The Contracts Section confirmed that this concern had been raised with the requesting office, EDP/DA, which had reiterated its request that the Service Agreement run parallel with the Leasing Agreement of 54 months concluded between UNIDO and IBM to cover hardware and software for the establishment of the mainframe computer facilities.

A member of the Committee proposed that recommendation be given for a Service Agreement with IBM for the period 1 April 1990 to 31 December 1991, for which certified funds are available, while advising IBM of the possibility of renewal of this Agreement subject to negotiations on the fixed service charges for the remaining period.

The Contracts Section informed the Committee that this possibility had been discussed with IBM which had responded with a price increase of AS 113,960 per year on its service charge.

The Committee was of the opinion that it could not recommend approval of this proposed Service Agreement and requested the Contracts Section to enter into further negotiation with IBM with respect to the duration of the Agreement for the period from 1 April 1990 to 31 December 1991 and also with respect to possible relevant termination charges, and inform the Committee of the outcome of such negotiations.

(c) Meeting on 24 August 1990

The Contracts Section informed the Committee that, as a result of its negotiations, IBM had offered UNIDO the possibility to terminate the System Service Agreement at the end of each charging period of twelve months without paying adjustment charges. However, IBM confirmed that is was not in a position to accept a contract for a shorter duration without increasing its price by AS 113,960 per year.

In view of the information provided, the Committee agreed to recommend approval of award of contract to IBM, Austria for a period of 51 months commencing 1 April 1990 in the amount of AS 3,062,634 for the period 1 April 1990 to 31 December 1991 under Financial Rule 109.19 (e), 'proprietary article'.

The Committee further requested the Contracts Section to present this case for its consideration in September 1991 by which time the fixed service charge should have been received from IBM for the remaining period of the proposed Service Agreement. It was considered essential that the deadline of September 1991 be strictly adhered to in order to allow UNIDO to comply with the three month termination notice to IBM, should this be necessary at that time.

11.2. Purchase Order

On 20 September 1990 an internal Purchase Order No. 12-0-10180 was issued with a view to obligating AS 644,157 to cover expenditures for the period 1 April 1990 to 31 December 1990.

11.3. Agreement.

The System Service Contract was signed on 18 October 1990 by UNIDO and on 19 October 1990 by IBM.

Para. 9.0 stipulates that UNIDO may terminate the contract upon three months prior written notice to IBM, the termination to become effective at the completion of the current charging period. The possibility of UNIDO becoming liable to pay adjustment charges is also laid down in this paragraph.

11.4. Our comments

The extension of the IBM Lease Agreement for the mainframe computer facility through 1996 will necessitate a similar extension of the Systems Service Agreement.

12. Agreement for Facilities Management.

12.1. Bidding Specifications

On 25 September 1989 the bidding specifications were prepared by EDP/DA.

(a) Introduction

UNIDO is a large organization undertaking a rapid, multi-faceted upgrading of its technological working environment in order to provide more efficient, effective services to its member-states. UNIDO has determined that it can best achieve this upgrading by having its own computer centre.

As the ideal, UNIDO wished to have its own Data Centre, properly manned with all staff and services located in the VIC.

UNIDO required a Facilities Management (FM) firm to operate this computer centre under a five year contract.

(b) Role of the FM firm

In order for the mainframe vendor to turn over the hardware, software, and operating systems (MVS & VM) to UNIDO the FM-firm must check and certify that the hardware, software and the operating systems are in full working order.

After the switchover of MVS Applications from the IAEA - also to be done by the mainframe vendor - the FM-firm assumes responsibility for the successful running of this system or group of systems on the new computer.

(c) Services to be provided

The FM-firm was expected to provide staffing and services in the following areas.

(i) Physical Date Centre Completion. Since the "establishment of the Data Centre" was one of the points specified as "required services" in the Mainframe Bid Specifications, the FM would therefore concentrate mainly on supporting UNIDO in those areas for which UNIDO and not the mainframe supplier is responsible.

(ii) Operation of the UNIDO Mainframe & Associated Equipment.

In addition to the hardware listed in the Mainframe Technical Specification, the FM-firm must also operate:

(a) five Central WANG VS mini-computers;
(b) one central XEROX Laser printer;
(c) two IBM 3745 communications controllers;
(d) a number of local terminal controllers (IBM - ALCATEL..);

Further, there is remote equipment which will require periodic maintenance, the upkeep of special software exits and support activities such as restarting lines:

(a) a XEROX 8700 Laser printer;
(b) some 20 XEROX 4045 remote Laser printers;
(c) possibly also IBM 3812 remote Laser printers.

Furthermore: automated operations.

(iii) Operating Systems Software Support.

(iv) Software Tools Support.

This support applies for all vendor-supported software, whether products of the same vendor as the operating system or not, i.e. including compilers, database software, and such packages as SAS.

(v) Data Storage Management.

(vi) Capacity Management.

(vii) Security Management.

(viii) Disaster Recovery Support.

(ix) Installation Support.

UNIDO requires the FM-firm to supervise all vendor activities on the premises of the data centre.

(x) Network Management.

(xi) User Support.

(xii) Administrative Support.
The FM-firm should support UNIDO, inter alia, in recommending required acquisitions to provide constant (or increased) levels of service to a growing community of users.

The firm should further support the specification and acquisition activities required as a result.

(xiii) Management Support.

(xiv) Staffing Emphasis for Services being requested.

UNIDO expected the FM-firm to provide staffing, in terms of skills and numbers, according to a number of categories of emphasis.

(d) Not to be done by the FM-firm:

(i) Mainframe applications development;
(ii) Support of personal computer applications;
(iii) End-user support of applications;
(iv) End-user training;
(v) Data Entry;
(vi) End-User Documentation;

Except as related to the computer facilities/software under its responsibility, for which the FM-firm's ;taff are to write/maintain the relevant sections of the installation manuals.

(vii) Database Administration;

(viii) Establishment of Security Rules.

(e) Itemized Prices

The FM-firm must describe its individual cost items which comprise the overall total cost for the

facility staff and relevant operating expenses and management fee.

12.2. Invitation of proposals

On 6 October 1989 fifteen companies were invited to submit proposals.
Closing date: 3 November 1989.

12.3. Bids

Five companies and the IAEA Data Centre submitted their offers.

The IAEA did not submit a formal proposal but rather offered an elaborate extension of their current service. The proposal was technically very sound, although not fully along the lines UNIDO requested. However, the Data Centre was not able to gain top IAEA organizational support for their offer. They communicated this to UNIDO thereby withdrawing their offer.

Costs quoted for five years - Evaluation by EDP & OA Service

IBM	AS	76,157,445	technically acceptable
EDV	AS	89,280,000	not technically acceptable
EDS	AS	97,458,600	technically aceptable
SHL	AS	104,875,995	not technically acceptable
CG	AS	133,951,242	not technically acceptable

12.4. Evaluation

On 8 December 1989 the bids were evaluated by EDP/DA. The process consisted of reviews for completeness and reasonableness, financial evaluation, comparison of alternatives to the initial requirements, some site visits and deliberations, and consideration of modified proposals.

Conclusions:

(i) The IBM offer was the lowest price.

1990 :	AS 12,540,000	(fixed)
1991 :	AS 14,760,000	(fixed)
1992 :	AS 15,498,000	
1993 :	AS 16,272,900	
1994 :	AS 17,086,545	
Total	AS 76,157,445	

The IBM offer required that the last three years be modified by the Austrian Labor Cost Index and possible changes to legislation regarding labor, social insurance and taxation as appropriate. EDP/DA, in its calculation of the IBM offer, assumed the cost index to be 5 per cent.

(ii) The IBM offer was initially characterized by statements indicating that they might have difficulty dealing with non-IBM vendors and products. It was felt that their staffing was not structured completely and was insufficient in number.

(iii) The number of staff initially offered appeared even uncomfortably low. Subsequent discussions resulted both in having a better staffing support offer within the context of the original price and the willingness to offer additional support which both parties agree is required at additional cost.

(iv) IBM is not a true FM company but was starting to get into the market in a couple of sites in the U.S. and stated that it was very interested in such business in Austria. It must be concluded that IBM did not have current experience in operating and managing a customer's facility. It was felt that this lack of experience affected their proposal where certain phrases used did not exactly meet UNIDO's requirements. When confronted with UNIDO's concerns they verbally were then restated differently. Sometimes IBM stated emphatically its willingness to do something and then stated its expectation of UNIDO taking care of the problem. In the early stages of any contract UNIDO would be, in fact, helping IBM to develop a proper FM attitude.

(v) From the negative side, UNIDO must realize that if it chooses IBM, it then has one single vendor who provides the hardware/software and operates the computer. This is a very strong, influential position and demands a very strong UNIDO balance to manage the situation in its own interest.

12.5. Contracts Committee

At its meeting on 15 December 1989 the Committee was informed of the bidding results. The Committee was further informed that the computer was scheduled to be delivered in the VIC on 28 December 1989 and that some of the facilities management staff must be in the VIC on 2 January 1990. For this reason it was considered essential to have approval of the Committee in order that the contract could be awarded before the commencement of work. The Committee agreed to recommend the issuance of a letter of intent to IBM, Austria and authority to negotiate the contract, having a ceiling of AS 76,157,445, under Financial Rule 109.21 (b), 'lowest technically acceptable offer'. The final contract must be presented to the Committee for approval prior to being awarded.

At its meeting on 4 April 1990 the Committee was informed that the negotiations had been finalized and all technical and contractual issues had been settled between the parties. It was considered imperative that the contract be signed with minimum delay in order to ensure that the facilities management being provided by IBM for the transfer of computer services from the IAEA and the operation of UNIDO's own mainframe system would take place within the time limit specified.

A member of the Committee raised the question of a termination clause since it was noted that the contract was to be concluded for a period of five years. The Contracts Section confirmed that, although IBM had requested the inclusion of a penalty clause charging ten per cent of the yearly fee, agreement had been reached to include a termination clause whereby UNIDO may serve six months' written notice not later than 30 June 1991 or 30 June 1993 to terminate the agreement on 31 December 1991 or 31 December 1993 respectively without penalty. The Committee noted that this reflected the fiscal periods of UNIDO.

The Committee noted that the invitation for proposals had indicated a five year period and queried this length of time and the related financial commitment. EDP & OA Service stated that when the original specifications had been prepared for proposal invitations, a period of two or three

years had been considered. However, based on experience in similar agreements, a longer contract period was found to be financially more advantageous taking into account the considerable costs of the financial and personnel commitments that the successful contractor would have to make.

In reply to a query by a member of the Committee, it was confirmed that an additional thirteen staff members had been estimated to be required in order for the EDP & QA Service to provide such facilities management but no additional posts could be made available for this purpose.

It was pointed out that the cost quoted by IBM was approximately A$ 20 million less than the second lowest technically acceptable proposal and that bearing in mind that IBM is not renowned for making the cheapest offer, this price difference reflected IBM's interest in taking the opportunity of entering into the field of facilities management.

The Committee expressed its concern that the submission did not contain the customary statement that funds for this contract are available. It was presumed that this had been checked before proposals had been invited and would be double-checked prior to signature of the contract. The Contracts Section informed the Committee that a requisition dated 14 March 1990 and received 3 April 1990 had been signed by the requesting officer, the approving officer, as well as the certifying officer. It was clarified that:

(i) the requesting officer requested the services;
(ii) the approving officer approved the appropriateness of the expenditure; and
(iii) the certifying officer certified that funds were available. In addition, the DDG/ADM had also signed the requisition.

The Committee was given to understand that funds will be obligated for one year only and that, according to this requisition, the intention of Financial Services is to allocate funds for 1991 in compliance with the conditions of the termination clause.

Since UNIDO was not able to make a yearly advance payment in January of each year, payments would be made monthly.

The Committee agreed to recommend the award of a contract to IBM, Austria in the total amount of A$ 74,278,800 under Financial Rule 109.21 (b), "lowest technically acceptable offer".

12.6. Agreement

(a) The agreement was signed on 5 April 1990 by both parties.

(b) Main stipulations

(i) Fees and Payments

In 1990: 6 x A$ 2,119,800 =	A$ 12,718,800	
In 1991: 12 x A$ 1,282,500 =	A$ 15,390,000	
In 1992: 12 x A$ 1,282,500 =	A$ 15,390,000	subject to indexing
In 1993: 12 x A$ 1,282,500 =	A$ 15,390,000	idem
In 1994: 12 x A$ 1,282,500 =	A$ 15,390,000	idem
Total:	A$ 74,278,800	partly subject to indexing

(ii) Penalties for failure

We refer to para. 202 of our report of 21 May 1990 (IDB.7/11-PBC.6/15) on the accounts of the biennium 1988-1989, where we observed that penalty clauses should have been stipulated, so that UNIDO would have been protected effectively against possible indemnification claims from a contractor due to the late or non-execution of contractual tasks by (an)other contractor(s).

As for the Agreement in question, in its proposal of 3 November 1989 IBM agreed on following penalty clause:

"If IBM fails to meet the monthly Availability Service level target of 97 per cent UNIDO may require a penalty payment of 0.5 per cent of the applicable price per calendar year for each full per cent of actual Service Availability below the 97 per cent goal. Total penalty payments per calendar year will be limited to a maximum of 3 per cent of the applicable price for that year."

In the final Agreement this clause was substantially modified, as follows:

"If IBM fails to meet a service target of a major service UNIDO may require a penalty payment of 0.03 per cent of the applicable fee per calendar year for each full per cent of the actual performance being below the target. Total penalty payments per calendar year will be limited to a maximum of 3 per cent of the applicable fee for that year."

In a letter dated 1 March 1990 IBM explained in this connection that in principle it agreed to re-include penalty payments in case of non-achievement of the agreed service levels, as offered in its proposal of 3 November 1989, but in a modified form, as during the negotiations the number of measurements has been increased from 13 to 234.

(iii) Termination of the Agreement

(a) Either party may, by written notice to the other party, terminate the Agreement in the event of failure of the other party to comply with any of its terms and conditions, if such failure has not been corrected within forty-five days from the date of written notice having been given of the failure and of the intent to terminate. UNIDO may effect such termination with at least one month's written notice while IBM may do so with six months' written notice.

(b) UNIDO may terminate the Agreement with six months written notice in case of a UNIDO request for a change which is essential for fulfilling its mission/responsibilities or which is essential for UNIDO's overall efficiency and productivity

* if IBM does not comply with such a request or

* if IBM does comply with such a request, however, at new conditions which constitute an undue demand on UNIDO.

(c) In order to take into account the fiscal periods of UNIDO or major organizational changes which could affect the continuation of a Facility Management Agreement the parties agree that UNIDO may terminate this Agreement on December 31st, 1991 or on December 31st, 1993 by giving six months written notice, i.e. not later than June 30th, 1991 and June 30th, 1993, respectively.

(d) If IBM fails to meet the Service Availability target of a major service more than three times in a calender year UNIDO may terminate the Agreement with six months written notice.

(e) In the event of termination according to any item of this article UNIDO agrees to return to IBM all of IBM's property and tools used for fulfillment of this Agreement and IBM specifically shall remove its properties from UNIDO's premises and shall remove all its service tools used for the Facilities Management operation but not acquired by UNIDO.

(iv) Acquisition Support

IBM will be used to monitor the actual growth of UNIDO's workload and compare this to the projected percentages for the four years until 1993, and in case of any deviation, recommendations for acquisition of additional hardware will be provided.

12.7. Our Comments

(a) In view of: (i) the comparatively low price quoted by IBM; (ii) the uncomfortably low number of staff initially offered by IBM; (iii) the very strong, influential, and questionable position IBM has got in UNIDO as vendor of the mainframe computer facility (hardware and software) and as contractor for the facilities management; we are of the opinion that the implementation of both contracts needs very strong control from UNIDO.

(b) If UNIDO intends to keep its own mainframe computer facility running for a number of years, EDP & OA staff should be prepared in the shortest possible time to take over the facilities management as early as possible.

13. OLIVETTI Workstations and Printers

(a) Leasing of 100 Workstations and Training

Contracts Committee Meeting on 9 June 1989

Approval was requested for an award of contract to OLIVETTI for the leasing of 100 Workstations for a period of 48 months. The contract would also include servicing of the equipment.

Nine companies had been invited to bid and a total of four offers had been received. After evaluation the bid of OLIVETTI had been selected as the lowest technically acceptable. The Committee noted that it had been presented with a good technical evaluation.

During previous meetings the Committee had discussed the need to go out for competitive bidding to find one company prepared to service the various types of computer equipment within the VIC. Contracts Section confirmed that bidding was to be carried out within the year. (In this connection, see para. 14.)

The Committee commented that UNIDO should not enter into any commitment for servicing for the period of the contract (i.e. 48 months) since the warranty period of 12 months should allow time for it to look at the market to compare prices. However, it was to be determined whether the terms of warranty stipulated that a servicing agreement be entered into and for what period. EDP & OA Service explained that during the period of warranty the company concerned would take the equipment away or expect it to be brought to them when repairs were required. What UNIDO required was however 'in-house' representation so that the equipment would be serviced on the spot and if necessary replacements provided as normally done in servicing agreements. It would therefore be advisable to have a period of one year of full servicing.

The Committee agreed to recommend approval of an award of contract to OLIVETTI for leasing alone. Recalling its repeated requests for an effective solution to the servicing issue it requested that negotiations be carried out regarding the minimum servicing period that could be entered into without affecting the terms of the warranty offered and requested that the Committee be informed of the outcome.

(b) Leasing of 100 Workstation Printers

Contracts Committee Meeting on 9 June 1989

The Committee was told that nine companies had been approached to provide leasing and servicing of the 100 printers and the same four companies as for the 100 Workstations had submitted offers.
After carrying out a series of tests EDP had come to the conclusion that the lowest technically acceptable bid had been that of AUSTRO-OLIVETTI.

The Committee agreed to recommend approval of an award of the contract to AUSTRO-OLIVETTI on the same basis (for leasing only), to the amount of US$113,472. Negotiations would be carried out with the company concerning a minimum period acceptable for servicing and the Committee would be informed of the outcome.

The approval of both contracts had been based on the assumption that the MIAC as well as the MITC had approved/cleared the acquisition of the items of equipment.

(c) Leasing of an additional 100 Printers

Contracts Committee Meeting on 22 September 1989

Approval was requested for the increase of the contract by an additional US$106,260 to cover the leasing of an additional 100 Hewlett Packard Desk Jet Plus Printers including Font Prestige Elite and printer cable as of 1 October 1989. It was noted that the increased price did not include servicing of equipment. (In this connection, see para. 14.) Taking note that the company was offering the best leasing terms, the Committee agreed to recommend that the contract with AUSTRO-OLIVETTI be increased by US$106,260 to a total of US$219,732.

(d) Purchase of 250 Workstations and 220 Printers

Contracts Committee Meeting on 27 November 1989

Attention was drawn to the fact that the submission was proposing to withdraw from the leasing agreement approved by the Committee for the leasing of 100 Workstations and instead, request the purchase of 250 Workstations and 220 Printers. Due to unforeseen budgetary restraints in the 1990/1991 biennium budget it had been necessary to revise the original submission.

EDP & OA Service informed the Committee that while leasing might be considered the optimum method for the acquisition of equipment in an organization the size of UNIDO, because of the restraints mentioned it had become necessary to purchase the equipment

within the 1988/1989 biennium. The purchase of this equipment was considered in the best interest of the Organization in order to meet the increasing demands of endusers.

A member of the Committee suggested that when negotiating the purchase of the equipment the question of a trade-in programme with the vendor should be discussed.

The Committee agreed to recommend the purchase from AUSTRO-OLIVETTI equipment valued at AS 15,163,240 (US$1,174,445) under Financial Rule 109.21 (b), lowest technically acceptable bid.

(e) Purchase of 20 PCs

Contracts Committee Meeting on 20 December 1989

Approval was requested for the purchase of 20 PCs with WANG look-alike keyboards and a PC Server. The attention of the Committee was drawn to the fact that these machines would be integrated into the Languages and Documentation Services of EPL, which Service in order to be compatible with other UN Offices worldwide was required to maintain the WANG System. The reason for the choice of OLIVETTI was that they were less expensive than the WANG machines while being fully compatible.

The Committee agreed to recommend the purchase from OLIVETTI equipment valued at AS 1,174,732 (US$93,233) under Financial Rule 109.21 (b), lowest technically acceptable offer.

14. Maintenance and Repair of Computer Equipment

Contracts Committee on 10 November 1989

The Committee was informed that eight companies had been invited to submit proposals. Three companies had submitted technically acceptable bids. The three companies were approached a second time and asked what reduction in the quoted price could be expected if the contract was awarded for three, five or seven years. After receipt of this information and evaluation by the Inventory Control and Property Management Unit it was found that the most cost effective solution would be to split the servicing arrangements into two parts: (i) various WANG and non-WANG equipment; and (ii) the equipment 'leased' from OLIVETTI including PCs and Hewlett Packard printers; and offer five year contracts including appropriate termination clauses to two companies.

It was noted that the OLIVETTI PCs and Hewlett Packard printers in use in UNIDO and the UN Units in the VIC were still under guarantee and that a maintenance contract would only come into force after the expiration of the guarantee. The Contracts Section pointed out that an amendment to the contract for the maintenance of any newly purchased OLIVETTI PCs and Hewlett Packard printers would have to be made following delivery of the additional equipment.

The Committee agreed to recommend the award of two separate contracts, each for a period of five years to: (i) TSG/DATASERVICE for the sum of AS 15,671,415 (US$1,214,838); (ii) OLIVETTI for an amount of AS 2,587,500 (US $200,581); under Financial Rule 109.21 (b), lowest technically acceptable offer.

15. Computer Networking D & E Buildings - Power Networking D & E Buildings - Power Requirements for Computer Equipment

We refer to the observations/recommendations we made in paras. 109 and 110 of our Report of 21 May 1990 (IDB.7/11-PBC.6/15), on the accounts of UNIDO for the financial period 1988-1989:

In July 1989 the Committee on Contracts agreed to recommend the award of a contract for the Computer Networking to the lowest technically acceptable bidder for AS 4,234,631. At a following meeting the Committee was told that UNIDO had now been informed by the company that a mistake had been made in the calculation of the price of plugs; the additional cost for this item would be AS 172,800. In addition, Buildings Management Section proposed to use different cable ducts, resulting in a further increase of AS 46,350. To this the Committee rightly pointed out that if the company had made a mistake in its calculation, it should bear the additional costs itself.

The Committee was informed that an award of contract had been made but the contract itself, although signed by UNIDO, had not yet been signed by the company. Even with the increase the company's price was still the lowest, the second offer being for AS 5.1 million. Moreover, there was an urgent deadline for carrying out the work. Management also referred to a further submission relating to another contract with the same company for Power Networking, emphasizing that it was essential that both lots of work should be carried out at the same time and it would be more efficient if the same company was responsible. Unfortunately, it had not been possible to bring both contracts before the Committee at the same time. On the basis of this additional information the Committee recommended that efforts be made to negotiate further with the company on the amount of the increase for the contract. At its following meeting the Committee was informed that the low quality single outlet R.J. plug which had been quoted for by the company was no longer technically acceptable to Buildings Management Section which had held discussions with the company, whereupon it was agreed that they should supply the new double plugs at the increased price. Contracts Section stated however that it had not been present at these discussions nor was it informed of the outcome until recently.

The Committee expressed its serious concern that the facts originally presented to it had not been accurate. A first submission had indicated that the company was to blame for the mistake. Now it was being informed that Buildings Management Section had accepted the offer although it was quite obvious at the time of the first submission that there was a significant reservation as to whether the bid(s) received were in fact technically acceptable. The Committee pointed out that the submission should have made reference to this reservation thus enabling it to formulate an appropriate recommendation which would take account of all the facts known.

The Committee also expressed its concern about the lack of communication/co-ordination between the Substantive Office and the Contracts Section.

On our query we were informed by Management that:

(i) This specific case was AT & T's first installation of this kind in Austria and therefore none of the companies in Austria nor Buildings Management Section had any previous experience;
(ii) Since UNIDO had decided that its mainframe was to be established and functioning by 1 July 1990, the computer and power networkings installation were to be completed at the earliest possible date.

As regards the power requirements for the computer equipment in buildings D & E, we noted that in August 1989 the Committee on Contracts was requested to recommend a waiver of competitive bidding and an award of contract to the aforementioned company for AS 979,819. It was told that in view of the time constraint Buildings Management Section had based its selection on two earlier bidding exercises (among which the one for the Computer Networking, mentioned above) whereby that company had submitted the lowest technically acceptable bid. The company concerned was the only one which would be in a position to deliver in time the approximately thirty km of cable. Furthermore, if the present power cable networking could be done simultaneously with the data cable networking, this would reduce the price of the present contract, resulting in a saving of AS 122,500.

We noted, however, that the requisition for the power requirements of computer equipment had been submitted after the bidding procedure for the data networking was done. We pointed out that the possible combined execution of both contracts should explicitly have been indicated in the requests for quotations, so that all prospective bidders might, while working out their offers, have taken full account of that possibility, what might have affected their prices. In this connection, we referred to the recommendations we made in our report of 31 May 1988 (doc. IDB.4/3-PBC.4/12), paras. 66, 71 (v), and 85, on the accounts of UNIDO for the financial period 1986-1987.

Annex II

External audit paper on the results of the examination of the acquisition of an EDP-system for UNIDO

SECTION 3. FISCAL MANAGEMENT

A. Budgetary Planning

(i) Medium-Term Plan

1. The General Conference has requested the Director-General to submit to the Board, through the Programme and Budget Committee (PBC), in the first year of each fiscal period, a draft medium-term plan for six years, which, upon adoption by the General Conference, will serve as a framework of policy guidelines for the formulation by the Director-General of the biennial regular and operational budget proposals for the following fiscal period.

2. We noted in this regard that measures to increase the efficiency and effectiveness of UNIDO activities through the systematic, widespread and integrated use of EDP, office automation (OA) techniques and teleprocessing, including the transition, during the plan period 1990-1995, from the International Atomic Energy Agency (IAEA) mainframe computer common service to full in-house capabilities for EDP and OA, have been put forward by the Secretariat already at an early stage and in an explicit manner as for instance in:

- document IDB.3/4, dated 14 May 1987, paras. 74-77, stating that the transition from IAEA mainframe computer common service to full in-house capabilities for EDP and office automation during the plan period 1990-1995 "will depend upon the results of studies and analyses made during the 1986-1987 and 1988-1989 bienniums";

- document PBC.4/3, dated 25 May 1988, paras. 87-90, explaining that: "with UNIDO acting as a central reference point for the increasingly complex information content of industry, it follows that its own management information systems should not be outdated. Indeed, the ability of UNIDO to manage its own computer would add to its credibility and capacity to offer assistance in this field"; "Only a computer system can meet the specific management and information needs of UNIDO ..."; "The above considerations have increasingly underscored the desirability of UNIDO establishing its own computer facilities instead of relying upon the common service provided by IAEA ... A new UNIDO computer system will be designed so as to ensure additional information processing capacity without proportionate increases in computer charges. However, in order to bring about significant qualitative changes in the UNIDO computer system, it would be desirable to bring about increased flexibility in resource allocation for both capital and current expenditures ..."; "Projections made by IAEA indicate that by 1990 the existing mainframe computer will be inadequate to servicing the needs of all users and that additional equipment will have to be purchased. It has also been indicated that the IAEA computer facility will shortly need to undergo major modifications, ..., the costs of which will have to be shared by users"; "UNIDO should now make a definitive choice by assessing carefully the cost of installing and maintaining an independent computer for UNIDO as against that of continuing to rely on the IAEA joint computer service. A detailed review of the component cost elements undertaken by UNIDO so far reveals that, even allowing for the initial investment required, the cost of UNIDO's own computer installation would not exceed, but could fall considerably short of the costs likely to be charged by IAEA for capital equipment and joint computer services for the six-year period 1990-1995."

(ii) Budgetary planning for EDP and OA

3. The terms of reference of the Management Information Advisory Committee (MIAC), established by the Director-General to replace, together with the Management Information Technical Committee (MITC), the existing Computer Management Committee with effect from 1 January 1988, include, inter alia, the responsibilities:

- to advise the Director-General on the policy to be followed and the action to be taken by UNIDO to ensure the efficient and cost-effective acquisition and use of computer resources for the Organization as a whole;

- to recommend to the Director-General priorities governing the acquisition and use of computer resources for the Organization as a whole;

- to recommend to the Director-General the overall budget of the Organization for computer resources and, within the approved budget, to recommend to the Director-General the allocation of such resources to each programme manager;

- to assign priorities within the available budgetary resources and, within those priorities, to approve the acquisition of computer hardware and software, including word processors and personal computers (document UNIDO/DG/B.62 of 10 December 1987, para. 5 refers).

4. We found that since the MIAC was not convened by the Chairman - Deputy Director-General/Department of Administration (DDG/ADM) during the period September 1988 - February 1990, the special EDP and OA budgetary planning and control mechanism established by the above mentioned instruction of the Director-General, failed completely in practice.

5. We learned in this respect that the Chairman considered the advisory mandate of the MIAC completed upon its approval in principle of the global computerization project towards the end of the year 1988 (and then replaced it by a more operational, informal management group led by the DDG/ADM). We could not ascertain whether the departure from the instructions on MIAC contained in the Director-General's Bulletin No. 62, over an extended and crucial period of time, has ever been challenged at UNIDO executive management level.

6. We observed, nevertheless, that, throughout the year 1988 and the beginning of 1989, a series of informal presentations to and consultations with the Director-General has been made by the Department of Administration (DDG/ADM and Chief, EDP and OA Service) on the subject of the computerization programme and that for this purpose estimated costs and budgetary implications of the programme for UNIDO have also been elaborated.

7. These cost estimates and budget plans, however, were often succinct, partial and tentative, based on changing assumptions, alternatives and time schedules, and sometimes elaborated without full involvement of Finance (Budget and Treasury Sections) and other Divisions concerned.

8. As a result, preparatory implementation activities for the computerization programme were initiated and major commitments made during the year 1989 without complete and reliable overall cost estimates and corresponding budgetary funding plans for the whole multi-biennial programme implementation. Eventually, such overall multi-biennial cost estimates were produced officially by the Secretariat only during the first months of the year 1990.

(iii) Information supplied to the Policy-Making Organs (PMO) on EDP and OA budgetary planning

9. Except for the general information on EDP and OA activities planning contained in the medium-term plan 1990-1995 and the specific proposals relating to the programmes and budgets for 1988-1989 (redeployments) and 1990-1991 (cfr. infra), the PMO of the Organization have never been informed officially by the Secretariat, prior to the year 1990, on the overall cost estimates and the financial planning of the computerization project.

10. In view of the sizeable budgetary implications of the programme for subsequent fiscal periods, such formal information and consultation, even if not explicitly required by the Constitution and the Financial Regulations of the Organization, would have been highly recommendable. The information note on the subject (conference room paper for distribution to Member States) as approved by the Director-General in February 1989 and the ensuing informal consultations cannot be qualified, in our view, as a sufficient and appropriate PMO-information exercise because of the incomplete (estimated additional costs only), provisional and tentative (savings, economies and redeployment of funds) nature of the information provided.

B. Budgeting and budgetary approval

(i) Budgeting

11. UNIDO Financial Regulations 3.1 and 3.5 stipulate that the Director-General must submit to the IDB through the PBC, in the second year of each fiscal period, a draft programme of work and the corresponding estimates for the regular budget and the operational budget for the following fiscal period.

12. UNIDO Financial Rules 103.2 and 103.3 prescribe in this regard that:

- "Heads of department shall submit budget proposals for the following fiscal period to DDG/ADM at such time and in such detail as the Director-General may prescribe"; and,

- "The budget proposals shall be reviewed by the Director-General, who shall decide on the programme content and resource allocation of the budget estimates to be submitted to the Board, through the PBC."

13. Apart from the general responsibility of the Budget Section for the preparation, in consultation with the Strategy, Policy and Planning Office (SPPO), of the Director-General's budget proposals, it should be recalled here that the Director-General had entrusted the MITC and the MIAC with a specific budgeting function as far as EDP and OA resources are concerned. Thus, the MITC must "assess individual computer budget submissions from departments in UNIDO, to determine the additional technical resources that would be required to support those submissions and to make recommendations as appropriate to the MIAC", while the MIAC itself is responsible for recommending "to the Director-General the overall budget of the Organization for computer resources".

14. The MIAC, however, has failed to assume its advisory function simply because this Committee, as already mentioned above, did not meet during the period September 1988 - February 1990.

15. For the fiscal period 1988-1989, the programme and budget proposals of the Organization prepared by the Secretariat did provide only for the usual (mostly recurrent) EDP and OA resources as follows:

- staff costs: US$952,200 (regular budget) and US$785,400 (operational budget)

- joint computer services IAEA: US$1,617,500 (regular budget) and US$392,600 (operational budget)

- data base acquisition and rental: US$167,600

- maintenance and repair of computer and office automation equipment: US$520,000

- replacement of existing computer and office automation equipment: US$228,000 (document GC.2/10 dated 10 September 1987 refers).

16. In 1989, however, sizeable redeployments of the 1988-1989 regular budget appropriations were announced (documents PBC.5/11 and GC.3/CRP.6 refer) with a view to allowing for, inter alia, "the accelerated and enhanced implementation of the computerization programme of UNIDO" during the latter part of the year 1989 (document GC.3/CRP.6, para. 7 refers).

17. We observed that these 1988-1989 appropriation redeployment proposals did not provide a complete, analytical statement of all requested EDP programme resources, partly because, as per standing UNIDO practice, expenditure categories relating to operating expenses (e.g. maintenance of premises and equipment and utilities, supplies and acquisitions) as well as other expenditure categories such as computer costs including the replacement programme of word-processing equipment, are administrated globally or centrally and are thus also budgeted for in the same manner. Therefore, the exact amounts earmarked for the computerization programme under various (global) objects of expenditure of the final regular budget proposals for the biennium 1988-1989 were not clearly specified and could not be identified by us. According to other information sources (i.e., the information note on the computerization pogramme provided to Member States in February - March 1989) an additional amount of US$4.34 million would be required for the EDP and OA programme in 1988-1989.

18. The handling by the Administration of the 1988-1989 appropriation redeployment exercise was,

in our view, inadequate because the elaboration and presentation of these proposals did not allow the PMO of the Organization to exercise fully their budgetary approval authority vested in the UNIDO Constitution and the Financial Regulations of the Organization (cfr. also infra).

19. In order to be acceptable from a legislative and technical point of view the 1988-1989 appropriation redeployment proposal document should have provided at least the following information:

- a description of all new EDP and OA activities (not previously approved by the General Conference);
- the additional financial resources requested under individual objects of expenditure for the financing of these new EDP and OA activities;
- from which individual objects of expenditure and to what extent resources were proposed for redeployment to finance the new EDP & OA programme;
- a detailed tabular statement of all commitments and other estimated budgetary implications of the proposed new 1988-1989 EDP and OA programme for individual future fiscal periods.

20. We wish to reiterate here that, as stated in our Report on the 1988-1989 accounts (document IDB.7/11 dated 21 May 1990, paras. 56 and 60 refer), the understandable practice of maximizing regular budget programme implementation efforts towards the end of the biennium as a result of the release of the 15 per cent appropriation reserve balance should on no account extend beyond the conditions and limits set in the Financial Regulations of the Organization and in the relevant decisions of the General Conference.

21. With regard to the biennium 1990-1991, the computer acquisition project has been presented in the introduction to the programme and budgets proposals of the Secretariat as follows: "... It is essential for UNIDO to establish and manage its own computer facility in order to support the key processes and activities of the Organization. It will relinquish its central processing capacity in the IAEA computer which will then be used to accommodate the Agency's own growing demand. Financial resources to implement this new programme are expected to be met through the redeployment of resources at present earmarked for the joint computer service provided by the IAEA and, if necessary, through economies in staff and non-staff expenditures." (document GC.7/10/Rev.1 dated 12 April 1990, para. 30).

22. Further on in the budget proposals document it is explained in more detail that "by the beginning of 1990, UNIDO will have installed its own mainframe computer and will gradually migrate from IAEA. Thus, the amount of US$450,300 represents contribution to the IAEA joint computer services during the initial stage of mainframe operation to ensure smooth running of the new system. The net decrease of US$1,909,800 over the previous biennium reflects reduced requirements of US$772,500 and the redeployment of US$1,137,300 to career development training (US$200,000); database acquisition and rental (US$483,800); and rental and maintenance of data processing equipment (US$453,500)." (document GC.3/10/Rev.1, para. 254 refers).

23. On the basis of available information on the subject in other Management files, the total of EDP and OA programme non-staff resources provided for in the 1990-1991 budget of the Organization can be summarized as follows:

Description of object of expenditure	Amount provided (at AS 12.90) US$
372. Mainframe operation subcontract (facility management)	741 000
434. Rental and maintenance of DP equipment (hardware and software leases/maintenance contracts)	1 838 100
620. Acquisition of DP equipment	460 300
935. Joint computer services IAEA (regular and operational budget)	818 000
TOTAL	3 857 400

24. We learned in this respect that the initial budget submission by the EDP Section amounted to US$7.3 million but had been reduced during the budgetary process by the then Chief, Budget Section to the amount of US$3.9 million retained in the budget proposals of the Director-General. The reasons for this reduction and in particular the cut of some US$2.0 million in EDP equipment resources was not satisfactorily explained to us. We found, moreover, that the full implications of this reduced EDP resources proposal have been realized only at a very late stage (October 1989?) at all levels of UNIDO Management.

25. In this respect, we cannot but record with concern the serious breakdown of internal consultation and coordination procedures, apparently due also to continuing unsatisfactory personal relationships, at the time of the preparation of the 1990-1991 budget proposals.

26. Ultimately, the EDP and OA 1990-1991 budget proposals to the General Conference in November 1989 were inappropriate in several respects:

- as for the 1988-1989 appropriation redeployment proposals, the 1990-1991 budget proposals did not provide information on the commitments and estimates of other possible costs of the overall programme for subsequent bienniums;
- since, as our review disclosed, it was perfectly clear in October 1989 (when the bids for the mainframe package were received) that there would be a substantial shortfall of resources (US$4.7 million) in 1990-1991, these facts should have been brought to the attention of the General Conference (specifying the sources - programmes/objects of expenditure - and the size of possible redeployments, for consideration and formal approval by the Conference).

27. Our investigation into this matter revealed that a document for the General Conference on the above subject has reportedly been drafted by the Budget Section at some stage but we were not able to find out why the PMO-information procedure has not been completed.

(ii) Budgetary approval

28. The budgetary approval authority of the Policy-Making Organs of the Organization is specified in:

- Financial Regulations 3.5, 3.6, 3.7 and 3.8 for the regular and operational budgets of a fiscal period;
- Financial Regulation 3.9 for supplementary estimates for the current fiscal period;
- Financial Regulation 3.10 for the revised estimates for the following fiscal period;
- Financial Regulation 3.12 for commitments for future fiscal periods;
- Financial Regulation 4.3 for transfers of expenditures.

29. According to the Secretariat (document IDB.7/31 dated 5 October 1990, para. 6 refers) the UNIDO computerization programme has been approved formally by the General Conference in November 1989, at the occasion of the adoption of the programme and budgets of UNIDO for the biennium 1990-1991, so that immediately afterwards the related activities and contracts could be finalized and the implementation of the programme carried out according to schedule.

30. It should be recalled, however, that document GC.3/10/Rev.1, on the programme and budgets for 1990-1991 did not provide a full financial implication statement of the computerization programme proposal but stated only (in para. 30) that UNIDO "will relinquish its central processing capacity in the IAEA ... Financial resources to implement this new programme are expected to be met through the redeployment of resources at present earmarked for the joint computer service provided by the IAEA and, if necessary, through economies in staff and non-staff expenditures".

31. Our examination of the chronology of events further indicated that sizeable regular budget expenditures (US$9,7 million) as well as financial commitments for future fiscal periods had already been made by the Secretariat for the computerization programme prior to 1 January 1990, on the basis of redeployments of regular budget appropriations for 1988-1989, effected by the Director-General and communicated in general terms to the PBC (document PBC.5/11) and to the General Conference in November 1989 (document GC.3/CRP.6 on the interim budget performance report for 1988-1989 refers). However, no formal decision was taken by the General Conference on the substance of these documents.

32. It is our understanding that in the Administration's view (cf. supra) the approval by the General Conference in November 1989 of the programme and budgets for 1990-1991 (and of the computerization programme component) implicitly included an approval for incurring expenditures and for entering into commitments for the computerization programme already in 1989, on the basis and within the limits of the redeployment of 1988-1989 appropriations exercise as effected by the Director-General and communicated to the PMO in the interim performance report for the biennium 1988-1989 (announcing, inter alia, the accelerated and enhanced implementation of the EDP-programme).

33. This course of action is none the less questionable given the scope of the Financial Regulations on budgetary approval authority since:

- no transfer between major objects of expenditures within the regular budget may take place, except when approved by the General Conference in accordance with Regulation 3.11 (Financial Regulation 4.3(b));
- transfers within major objects of expenditure of the regular budget may be made by the Director-General, who shall inform the Board, through the PBC, and the Conference thereof as soon as possible, ... (Financial Regulation 4.3(c));
- the Director-General may enter into commitments for future fiscal periods, provided that such commitments:
  (a) are for activities which have been approved by the Conference and are expected to continue beyond the end of the current fiscal period; or
  (b) are authorized by specific decisions of the Conference. (Financial Regulation 3.12);
- no resolution, decision or amendment involving expenditure which has not already been considered by the PBC and examined by the Board in accordance with Financial Regulations 3.6 and 3.7 shall be approved by the Conference unless it is accompanied by a programme and financial implication statement prepared by the Director-General ... (Financial Regulation 3.11).

34. In this regard, we have observed before that Financial Regulation 4.3(b), on the transfer of expenditures between major objects of expenditure of the regular budget, will remain unworkable in practice as long as the major objects of expenditure are not clearly defined in the budget and a solution is not found for the impractical timing of the General Conference sessions (at the end of the second year of the biennium). Nevertheless, a reference to Financial Regulation 4.3(c) to initiate sizeable expenditures as well as commitments for future fiscal periods, can, in the case of the EDP acquisition programme, hardly be considered consistent with the above mentioned legislative provisions on budgetary approval authority especially because even the eventual request for approval (i.e., the programme and budgets proposals for 1990-1991) was still not accompanied by "an appropriate programme and financial implication statement".

C. Budget implementation controls

35. For UNIDO, budget implementation control procedures are laid down in the Financial Regulations and Rules, and in administrative instructions issued by the Director-General, the DDG/ADM and the Director, Financial Services Division (FSD).

36. The Financial Regulations provide, inter alia, that:

(1) approval by the Conference of the programme of work and corresponding regular budget shall constitute an authorization to the Director-General to incur obligations and to make payments for the purposes thus approved and within the appropriations approved therefore (Financial Regulation 4.1(a) refers);

(2) obligations for the current fiscal period or commitments for current and future fiscal periods shall be incurred only after allotments or other appropriate authorizations have been made in writing under the authority of the Director-General (Financial Regulation 9.2 refers);

(3) the Director-General shall:

(a) in accordance with Regulation 12.1 establish detailed financial rules and procedures in order to ensure: (i) effective financial administration and the exercise of economy;

...

(c) designate the officers who may receive moneys, incur commitments or obligations and make payments on behalf of the Organization;

(d) maintain an internal financial control and internal audit which shall provide for an effective current examination and/or review of financial transactions in order to ensure: ... (ii) the conformity of obligations and expenditures with the appropriations or other financial provisions voted by the Conference ...; (iii) the economical use of the resources of the Organization (Financial Regulation 9.1 refers);

(4) subject to the Regulations the Director-General shall issue financial rules which shall govern the administration of all financial activities and transactions of the Organization. The Director-General may in the financial rules delegate authority to officials of the Organization (Financial Regulation 12.1 refers).

37. The Financial Rules of the Organization state that "no commitments, obligations or expenditures against any funds may be incurred without the written authorization of the Director-General" (Financial Rule 107.1 refers) and establish further a system for the administration of budget appropriations through: (a) allotments of funds made available by authorization from DDG/ADM in order to commit funds covering a specific period and/or a specific purpose (Financial Rule 109.1 refers); (b) certification of obligations and expenditures by a certifying officer designated for the purpose by DDG/ADM before the expenditure is actually incurred; and, (c) subsequent approval by an approving officer designated for that purpose by DDG/ADM before the obligation is recorded or payment is made (Financial Rules 107.10, 109.3, 109.4 and 109.5 refer). Moreover, pursuant to Financial Rule 109.6, DDG/ADM may approve commitments against current and future fiscal periods when they are necessary in the interests of the Organization, provided that the conditions set forth in Financial Regulation 3.12 are met. However, the granting of approval to enter into commitments for which no appropriations have been made shall be subject to such limits and approvals as the Conference may prescribe. Such commitments for future fiscal periods shall normally be restricted to administrative requirements of a continuing nature and to other contracts or legal obligations where longer lead times are required and the DDG/ADM shall maintain a record in the accounts of all such commitments. ...

38. The provisions of the Financial Regulations and Rules mentioned above have been elaborated in administrative instructions issued by the Director-General (Director-General's Bulletins Nos. 62 and 84, and UNIDO/DG/B.8/Rev.2 of 26 March 1987 refer), the DDG/ADM (Administrative Instruction UNIDO/DA.71 of 13 May 1988, and in particular Rev.2 of 18 July 1989 and Rev.3 of 18 April 1990 refer) and the Director, FSD (Financial Service Internal Instruction No. 7 and Revisions, in particular Rev.3 of 28 February 1989, Rev.4 of 7 November 1989 and Rev.5 of 19 January 1990 refer).

39. Thus, within the general budgetary control system, the functions and responsibilities of a certifying officer or alternate certifying officer at UNIDO are:

- the certification that a proposed obligation or expenditure:

(a) is in accord with existing regulations, rules and instructions;

(b) is reasonable and in accord with the purpose for which the relevant appropriation was approved and the allotment made;

(c) can be met from the available balance of the allotment to the relevant account, with due regard to forseeable future obligations;

- to ensure that the proposed obligations or expenditure shall be properly classified and coded, where applicable, in accordance with the allotment account codes issued by the Budget Section;

- to request, should any question arise in connection with the proposed obligation or expenditure, and if he or she considers it necessary, the written instructions of the DDG/ADM, or other officer to whom the latter has delegated the required authority. If the certifying officer is instructed to certify, responsibility for the action taken shall rest with the officer issuing the instruction, and the certifying officer should qualify his or her certification to the effect;

- to submit to the DDG/ADM the appropriate documents in support of proposed obligations and expenditures as well as such explanations and justifications as the DDG/ADM may require.

40. In the same standard control system, the functions of the approving officers are to approve:

- the recording of duly certified obligations in the relevant accounts;

- payments on the basis of duly certified supporting vouchers and other documents which indicate that the goods or services have been received in accordance with the documents establishing the obligation, having verified that:

(a) the payment has not been made previously;

(b) the supporting documents do not have irregularities on their face which indicate that payment is not properly due;

(c) no other information is known which would bar payment.

41. In practice, the UNIDO procurement/contracts officers are required, before actually concluding a contract, to obtain the certifying officer's certification of the availability of the required amount, to be evidenced by the signature of the certifying officer on the printed form "Requisition for supplies and/or equipment". The approving officer's approval, based on a checking of the supporting vouchers and other documents submitted, is normally evidenced by a handwritten and dated signature on the copy of the purchase order form already filled in by the purchase/contracts officer concerned and certified by the responsible certifying officer.

42. Especially for the EDP-project, moreover, the Director-General had assigned the MIAC the duties, inter alia:

- to recommend allotments to be established for computer services;
- to recommend to the Director-General the allocation of computer resources to each programme manager;
- to review the status of the allotments periodically, introducing changes as necessary;
- to assign priorities within the available budgetary resources and, within those priorities, to approve the acquisition of computer hardware and software, including word processors and personal computers (emphasis added) (UNIDO/DG/B.62 of 10 December 1987 and UNIDO/DG/B.84 of 19 July 1988 refer).

43. In the same context, the Director-General has instructed on 12 June 1989:

- the transfer of the responsibility for the certification of expenditures to the substantive offices as of 1 July 1989;
- that allotments in the regular budget and the operational budget are only to be made after approval by the Office of the Director-General;
- the Department of Administration to arrange for an early review of the 1988-1989 appropriations including income in order to determine the expected utilization of resources by the end of the biennium as well as a report on the status of the proposals for the use of the funds recently redeployed for computer equipment, ..., to be submitted to the Office of the Director-General by end of June 1989 (Note for the file, Director, FSD of 15 June 1989 refers).

44. Audit observations on the budget implementation control procedures:

(a) Already in our audit observations for the biennium 1986-1987, we noted shortcomings and inconsistencies in the certifying and approving officers budgetary control system, partly as a result of organizational difficulties caused by the conversion of UNIDO into a specialized agency. The Administration replied, at the time, to our observations that the certifying officer is generally the head of the programme and that alternates work under the direction of the head of the programme; according to the Administration it would seem that due care and attention must be used in certification and that detailed procedures would have to be worked out within the context of each department. The available resources of UNIDO, however, do not permit limiting the approval function to the professional category only but management of human resources aims at adequately using the capabilities of the staff;

(b) Also, in our report on the accounts of the Organization for the biennium 1988-1989 (document IDB.7/11 dated 21 May 1990, paras. 63-66) we referred to frequent instances where expenditures - sometimes for sizeable amounts - had been incurred without prior reservation of funds and budgetary authorization in the prescribed, standard format of specific allotment advices. The Secretariat agreed with our recommendation that certifying officers should exercise stricter budgetary control of expenditures and announced that, in order to ensure the attainment of that objective, the staff concerned are scheduled to receive additional training on the work and responsibilities incumbent upon a certifying officer (documents IDB.7/11/Add.1 dated 13 June 1990 and Add.2 dated 11 October 1989 refer);

(c) We wish to highlight in particular that, for the regular budget 1988-1989, overexpenditures resulting from the implementation of the EDP-programme were recorded as at 31 December 1989 as follows:

Career development training	US$124,922 (39.2 per cent of the appropriation)
Rental and maintenance of premises	US$311,264 (29.0 per cent)
Supplies and Materials	US$660,350 (46.7 per cent
Joint Computer Services	US$157,520 (8.4 per cent)

(Document IDB.7/10 - Schedule 1 "Regular Budget - Financial Performance Report for 1988-1989 by object of expenditure" refers);

(d) We found that the procedure described in paragraph 41 above, was indeed followed for the purchases, contracts and leases initiated in 1989 for EDP-equipment, software, etc. but that the final certification of the facilities management contract with IBM was apparently not given until March 1990;

(e) We concur, however, with the conclusion of UNIDO's special internal review team that there is a regrettable ambiguity in the Financial Rules of the Organization on the matter of the authority to designate approving officers (Rule 107.10: Director-General; Rule 109.3 (ii): DDG/ADM) and that, in practice, this authority is still always being assumed, as in the past, by the Director, FSD, without express delegation of authority from either the Director-General or the DDG/ADM;

(f) Our examination, nevertheless, revealed no formal irregularities, attributable to certifying or approving officers, in the expenditures (disbursements and obligations) for the EDP programme recorded in the accounts for the 1988-1989 biennium as at 31 December 1989 (cfr. infra) while the 1988-1989 overexpenditures mentioned above clearly relate first of all to the accelerated and enhanced EDP programme implementation towards the end of the year 1989; moreover, in our view, certifying officers have to deal with the regularity of proposed obligations against the approved budget of the current fiscal period (allotments) and approving officers, usually general service staff, ought to check the materiality and the validity of vouchers and supporting documentation but their responsibilities, as outlined in the Financial Rules and administrative instructions, do not and cannot include a certification or approval of commitments for future fiscal periods or the overall control on globally or centrally administrated object of expenditure categories.

(g) Certifications for major 1988-1989 EDP-acquisition requisitions (leasing arrangements) apparently were made on the assumption that sufficient funds would be available through redeployments and savings;

(h) In our analysis, the major flaws in the internal control system of the Secretariat at the implementation phase of the EDP programme consisted of:

(i) the circumstance that the MIAC, specifically designated by the Director-General to assume a central co-ordinating role in the budgetary and financial monitoring and control process of the EDP programme implementation, defaulted completely but that, none the less, the programme was allowed to continue and even accelerated and enhanced towards the end of the year 1989;

(ii) the fact that, contrary to the requirement of the Financial Regulations and Rules of the Organization (cfr. infra) the Secretariat had not established procedures for the examination, approval, recording, accounting and reporting of commitments for future fiscal periods;

(iii) the decision to accelerate and enhance the EDP programme implementation towards the end of the year 1989 without adequate budgetary and cash funding proposals/solutions for EDP expenditures during 1990-1991 and subsequent biennia.

D. Budgetary accounting and financial reporting procedures

45. Total actual expenditures from January 1989 to October 1990 for the EDP acquisition programme against the budgetary resources of the Organization for the biennium 1988-1989 as at 31 October 1990 amounted to US$9.7 million and were distributed over the objects of expenditure as follows:

		Total actual cost US$	Outstanding obligations
372	Software	308,303.69	0.00
412	Minor alterations to premises	2,207,296.88	0.00
413	Cables	15,521.95	0.00
415	Contracts other than EDP equipment-related	37,782.16	0.00
434	Contracts equipment-related	2,553,300.80	0.00
443	Industrial Inquiry Systems, ICC	6,433.12	0.00
512	Stationery	2,000.00	0.00
527	Software	753,129.80	23,462.00
532	Manuals	10,798.31	0.00
592	Data processing supplies	146,397.54	5,341.00
599	Miscellaneous supplies	10,386.24	0.00
611	Furniture	138,569.59	0.00
620	Hardware	2,436,264.11	30,895.00
935	Joint Computer Services	1,073,748.52	16,607.00

46. We found that these expenditures had been recorded correctly and completely in the accounts of the Organization and had also been reported in full on the financial statements and reports of UNIDO for the biennium 1988-1989 as at 31 December 1989. Our review indicated further that the obligations raised in 1989 for the EDP acquisition programme had been made in accordance with the applicable, legislative conditions and criteria and had been covered by appropriate obligating documents.

47. We noted, however, major shortcomings in the UNIDO recording, accounting and reporting procedures for commitments against the regular budget appropriations of future fiscal periods (Financial Regulation 3.12 and Financial Rules 109.6 and 104.3 refer) since our examination disclosed that most of the EDP acquisition project commitments at the end of the biennium 1988-1989 were not recorded in the regular budget accounts of the Organization and consequently also not reported, as required, as deferred charges on the UNIDO General Fund Financial Statement of assets, liabilities and fund balance as at 31 December 1989.

48. On our queries, UNIDO Management explained in this regard that "the current procedure is that when, towards the end of a biennium, Accounts and Payments Section (APS) receives obligations coded for the next biennium, these are set aside until after the second cut-off and processed as a single proof list, the total of which is included in the financial statements as commitments against future biennia. When the accounts for the new biennium are opened these commitments, plus the obligations received in the new biennium, become obligations of that biennium and are recorded and controlled in the normal manner". We learned that at the time of the second cut-off of the 1989 accounts APS had received obligations totalling US$1.732 million for 1990. Of

this total, US$1.402 million were in respect of the Regular Budget (approximately 30 documents were PTBs; 55 were purchase orders; others were 4 MODs and 11 consultancy contracts).

49. In general, Management stated that for Headquarters activities requisitions are normally issued for the total duration of the contract, covering the total amount requested. However, since allotments are issued under the Regular Budget on an annual basis, obligations are issued for the same period. The Contracts Section submits to the Committee on Contracts for review all cases relating to long-term contracts spanning several consecutive years and budget cycles, including information on the total value of the contracts as well as a breakdown of the anticipated expenditures on a year-by-year or budget-cycle-by-budget-cycle basis; after each case has been endorsed by the Committee on Contracts and approved by the DDG/ADM, the Contracts Section, issues on a yearly basis, a series of internal purchase orders (obligating documents) which are processed through the FSD.

50. FSD Management thought that the problem is one which requires that certifying officers be more fully briefed. For example, APS received on 7 December 1989, a purchase order for AS 24,351,700 in respect of payments to be made in 1989. This was based on a requisition certified in October 1989 for a total cost of AS 74,812,704 covering a period of 54 months. On 22 February 1990 APS received a purchase order for AS 6,794,364, in respect of payments to be made in 1990. This purchase order was based on requisition apparently a renewal of the contract referred to in the earlier purchase order. Thus we seem to have a legal liability covering 54 months which is represented by obligations covering only 12 months. APS has no knowledge of remaining value of the contract, which should be recorded partly as an additional obligation for 1990-1991 and partly as a commitment against future periods beyond 1991.

51. Management therefore informed us that "in order to correct in cases where we have long period legal liabilities, consideration is being given to have such liabilities evidenced by purchase orders covering the full amount of the liability, phased according to the correct payment schedule, ... APS would have to adjust its recording system to accept and report to certifying officers on obligations covering more than one future period. One question that needs study and is under revision is how to cover future fiscal periods when allotments are not made for the whole of the current fiscal period".

52. In our view, the inadequate budgetary management noted for the EDP acquisition programme at its implementation phase is explained at least partly by the lack of proper and reliable financial information resulting from the general inadequacy of the existing commitments accounting and reporting procedures of UNIDO.